# ENGINEERING NEWS-RECORD

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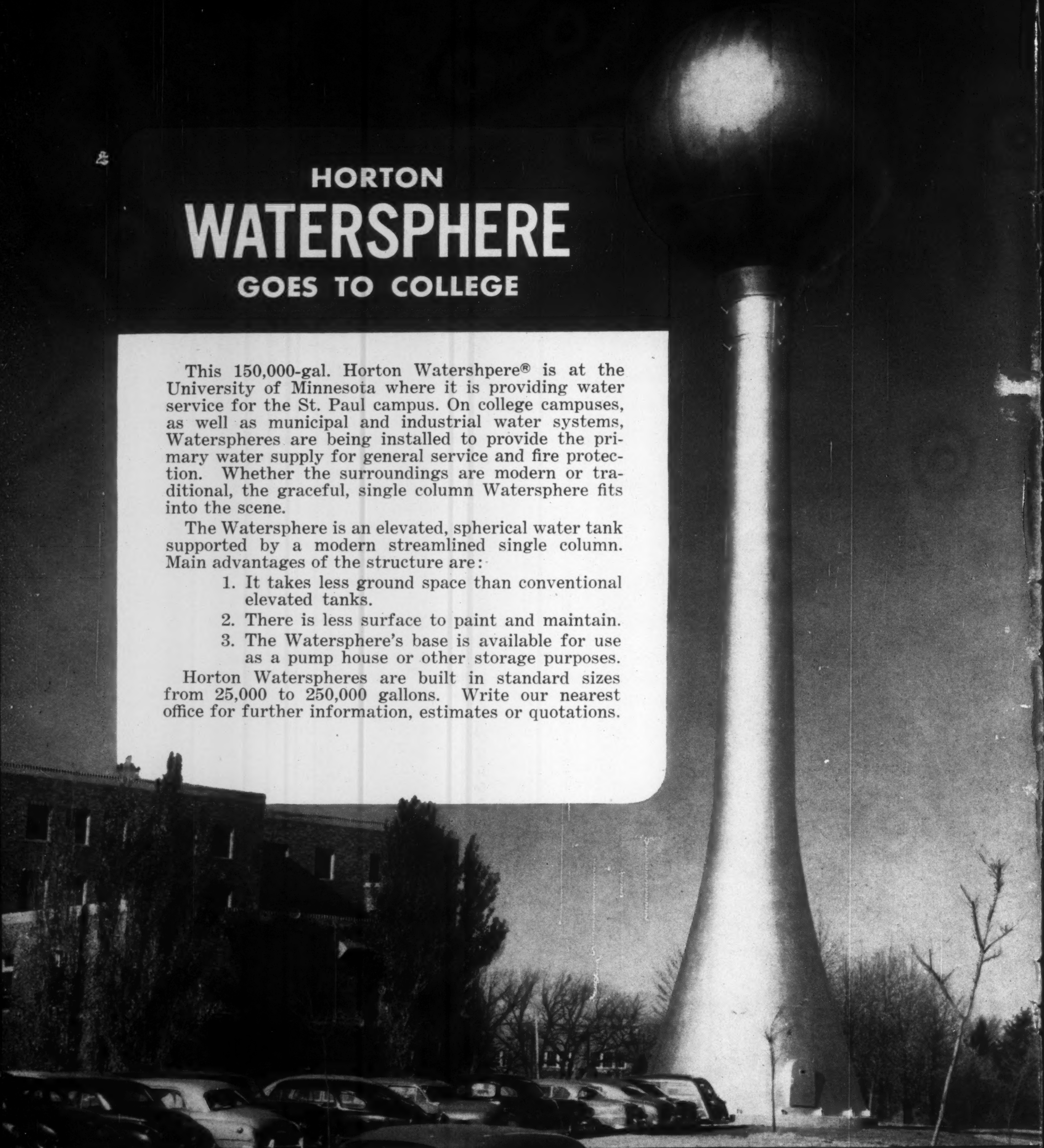
A McGRAW-HILL PUBLICATION



## HORTON
# WATERSPHERE
## GOES TO COLLEGE

This 150,000-gal. Horton Watershpere® is at the University of Minnesota where it is providing water service for the St. Paul campus. On college campuses, as well as municipal and industrial water systems, Waterspheres are being installed to provide the primary water supply for general service and fire protection. Whether the surroundings are modern or traditional, the graceful, single column Watersphere fits into the scene.

The Watersphere is an elevated, spherical water tank supported by a modern streamlined single column. Main advantages of the structure are:

1. It takes less ground space than conventional elevated tanks.
2. There is less surface to paint and maintain.
3. The Watersphere's base is available for use as a pump house or other storage purposes.

Horton Waterspheres are built in standard sizes from 25,000 to 250,000 gallons. Write our nearest office for further information, estimates or quotations.

**CHICAGO BRIDGE & IRON COMPANY**

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| Birmingham, 1 | North 50th Street |
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| Detroit, 26 | Lafayette Building |
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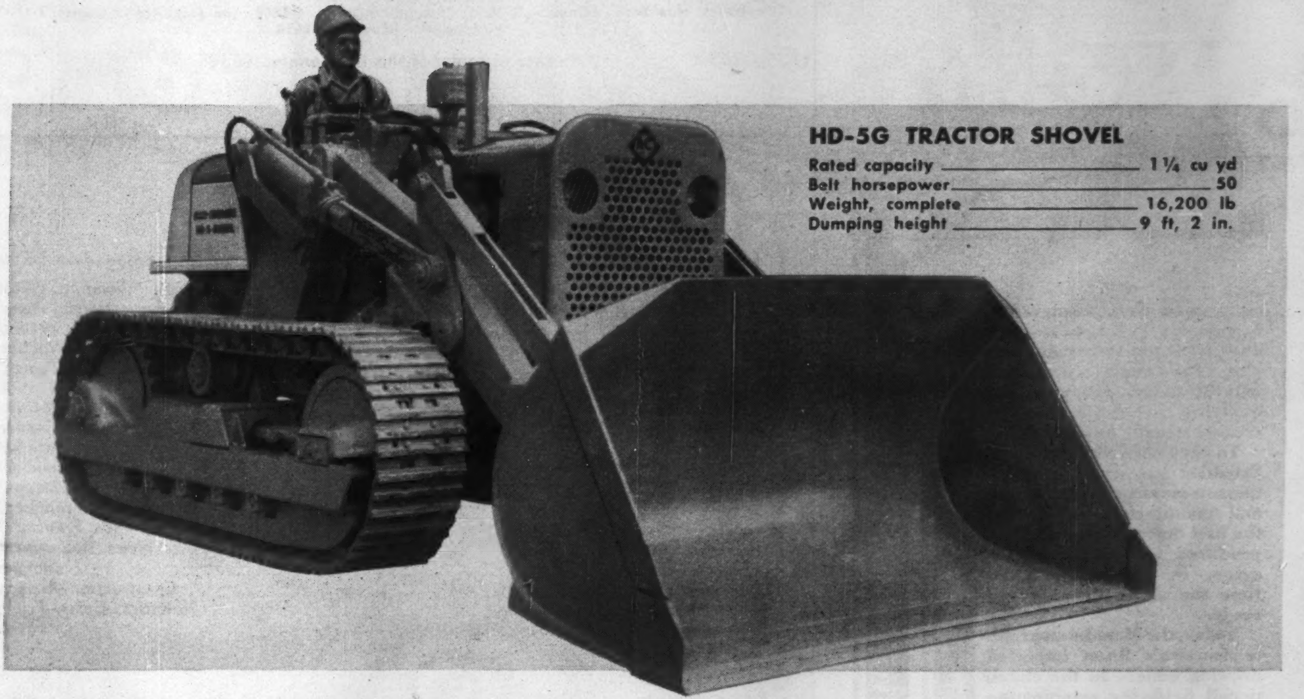
| New York, 6 | 165 Broadway Building |
| Philadelphia, 3 | 1700 Walnut Street Building |
| Pittsburgh, 19 | Alcoa Building |
| Salt Lake City, 4 | West 17th South Street |
| San Francisco, 4 | 200 Bush Street |
| Seattle, 1 | Henry Building |
| Tulsa, 3 | Hunt Building |

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

In Canada: HORTON STEEL WORKS LIMITED, FORT ERIE, ONT.

# Pace-Setting HD-5G Tractor Shovel

# NOW BETTER 3 WAYS



**HD-5G TRACTOR SHOVEL**

| | |
|---|---|
| Rated capacity | 1¼ cu yd |
| Belt horsepower | 50 |
| Weight, complete | 16,200 lb |
| Dumping height | 9 ft, 2 in. |

From the time of its introduction seven years ago, the Allis-Chalmers HD-5G Tractor Shovel has been tops in popularity. Many thousands are daily proving their ability and versatility on all kinds of material handling and excavating jobs.

Now, design refinements make the HD-5G a three-way better value than ever before:

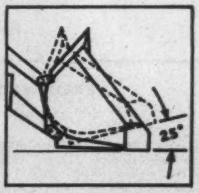
## 1. Has Bigger Rated Capacity

New bucket handles a big 1¼-yd load — streamlined design now helps roll in large loads with less tractor effort. The back of the bucket has been brought forward and the sides extended to cut spillage, put more payload where it's wanted.

## 2. Helps the Operator Do More

Cleaner dumping with the new bucket saves the operator time and effort shaking out loads.

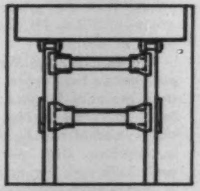
For added versatility, there is a two-position bucket available with both standard automatic return to digging position and operator-controlled tip-back. If the operator chooses to use the controlled tip-back, he can load the bucket, then tip it back approximately 25° before raising, assuring maximum output under special conditions such as downhill loading or loading loose materials.



The HD-5G helps the operator do more in other ways, too — giving him full vision, fast and easy control, cleaner platform and more comfortable seat from which to work, and more working time with truck wheels, support rollers and idlers that need greasing only once every 1,000 hours.

## 3. Works at Lower Cost

The HD-5G now works at even lower cost than ever before — not just because it *does more,* but because it has features that mean *less maintenance, longer life.* For instance, new type tubular bracing on the bucket booms provides added strength and support, keeps the bucket in line. The floor at the rear of the new bucket has been raised seven degrees to reduce wear on the bottom sheet. Heavy-duty truck wheels and idlers are available for particularly tough working conditions. One-piece, full-length main frame permits unit construction so that major assemblies can be removed without disturbing adjacent units, putting tractor back on the job in hours rather than days.



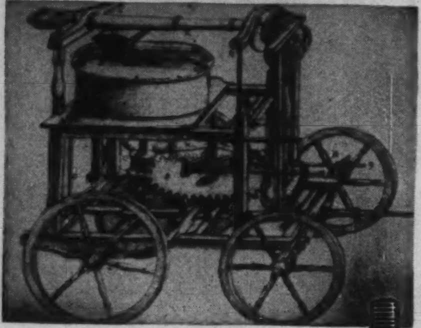
### *Ten Quick-Change Attachments Add to HD-5G Versatility*

**Bulldozer**
**Angledozer**
**Narrow Bucket**
**Rock Bucket**
**Crane Hook**
**Light Material Bucket**
**Trench Hoe**
**Lift Fork**
**Tine Fork**
**Rock Fork**
**— also rear-mounted Ripper**

*See your Allis-Chalmers dealer for more about these and other production-boosting features of the popular HD-5G Tractor Shovel.*

**ALLIS-CHALMERS**
**TRACTOR DIVISION • MILWAUKEE 1, U. S. A.**

17th century
PENCIL SHARPENER?



Well, whatever it is, complex as it appears, this drawing is not nearly as complex as the engineering drawings of today. The need for drafting precision has increased steadily over the years.

To keep pace with this need, Staedtler has made constant improvement in pencil design and manufacture ever since the first Staedtler pencils were produced in Nurnberg, Germany, in 1662—about the time the above drawing was made.

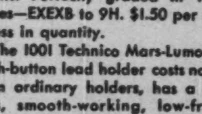
Today, the Mars-Lumograph is America's finest imported drawing pencil. In the clutch pencil field, the combination of the new 1001 Mars Technico push-button lead holder and 1904 Mars-Lumograph imported drawing leads insures your having the very best.

The 2886 Mars-Lumograph drawing pencil gives you precise thickness and the blackness of line needed for crisper, cleaner prints. Perfectly graded in 19 degrees—EXEXB to 9H. $1.50 per dozen—less in quantity.

The 1001 Technico Mars-Lumograph push-button lead holder costs no more than ordinary holders, has a noiseless, smooth-working, low-friction clutch mechanism, lightweight wood construction with perfect balance and, built into the push-button cap, a unique lead sharpener. $1.50 each—less in quantity.

1904 Mars-Lumograph Imported Drawing Leads are so opaque that inking-in is not necessary. Leads are ribbbed for firm clutch grip and each has a metal cap which prevents sliding from holder. Available in 18 degrees—EXB to 9H. $1.20 per dozen—less in quantity.

2H
2886 J.S.STAEDTLER, INC. MARS LUMOGRAPH
MADE IN GERMANY
2H
1001 J.S.STAEDTLER MARS-LUMOGRAPH <TECHNICO>



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**Robert F. Boger**
Publisher

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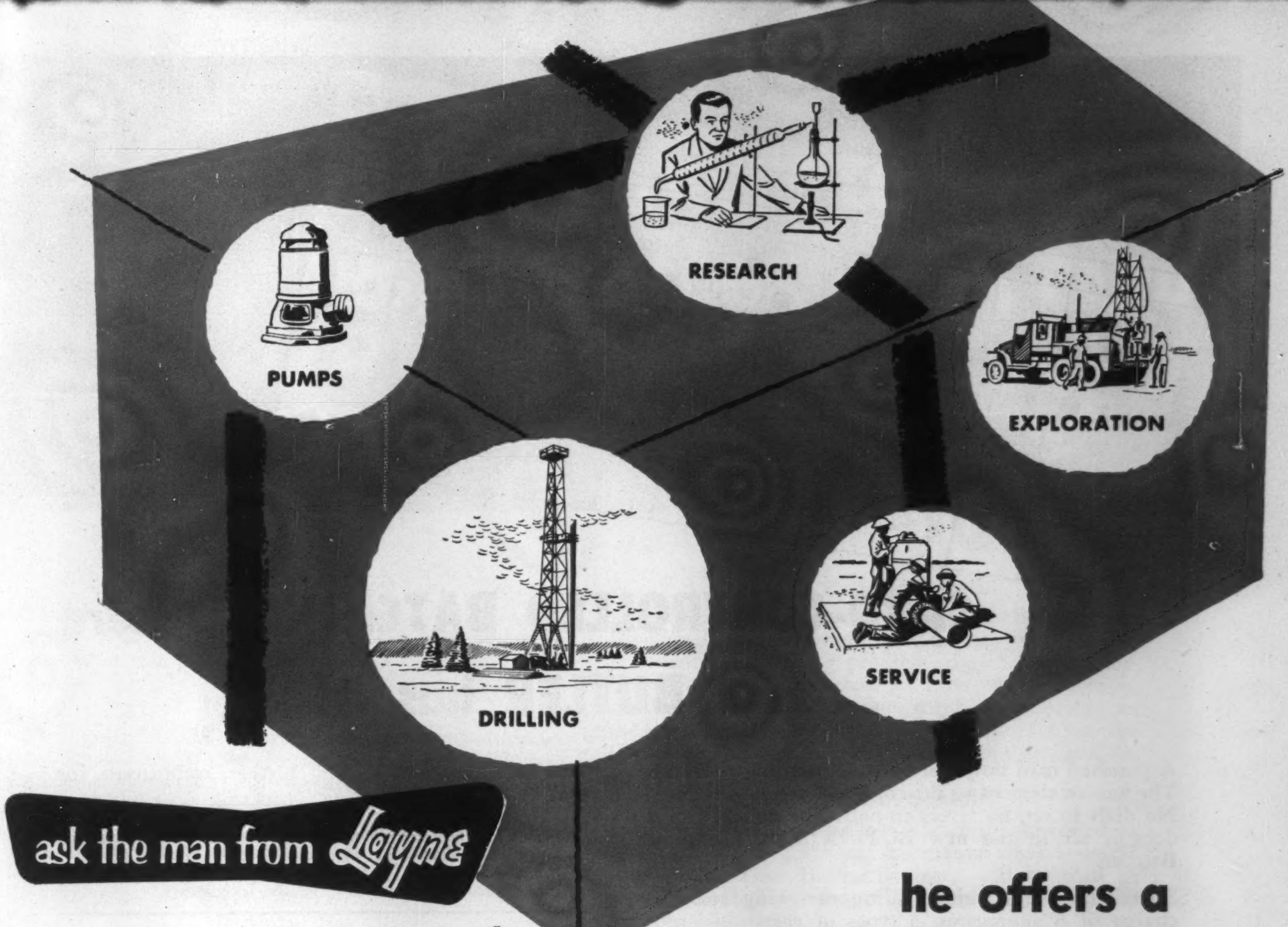
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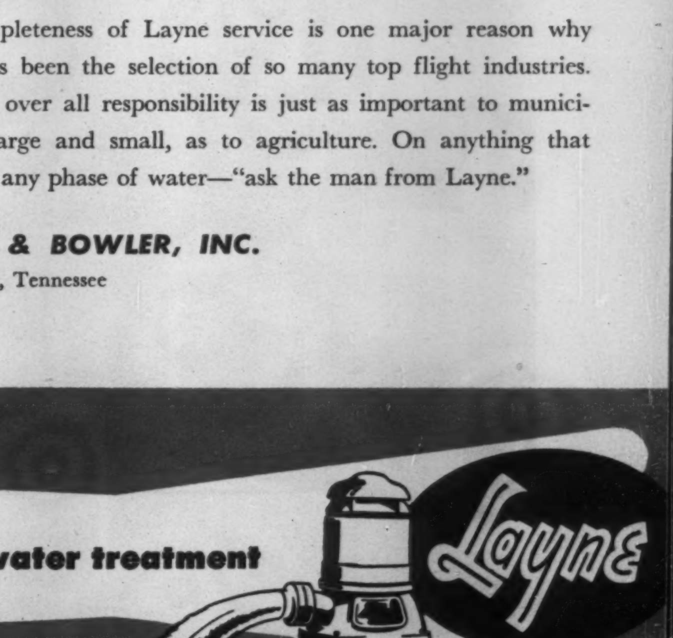
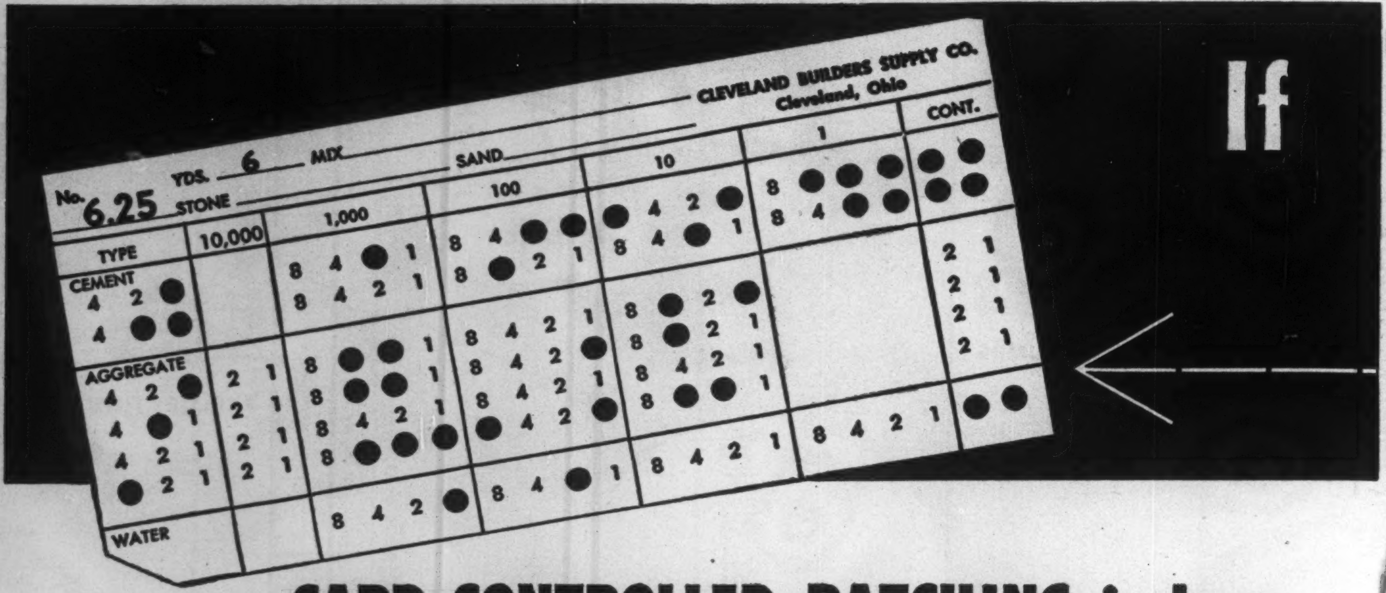


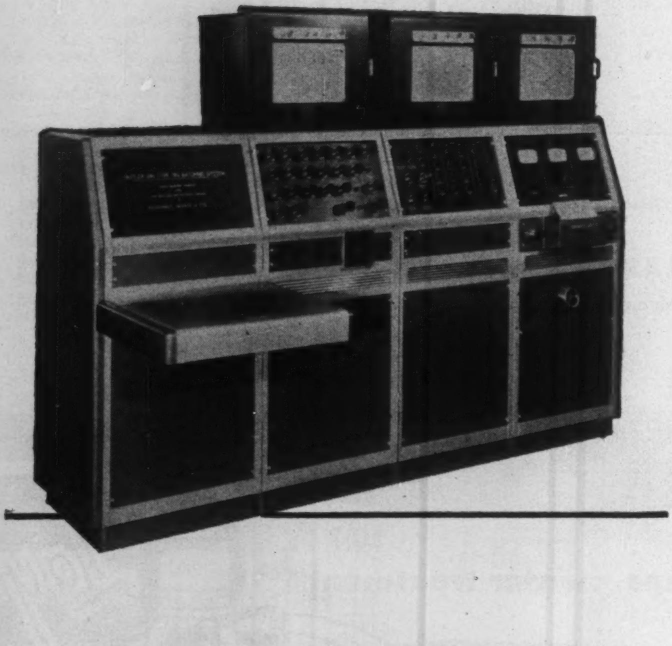


# CARD-CONTROLLED BATCHING is here
# . . . and BUTLER has it!

A punched card now can be your batching operator. The human element — the chance of error — is gone. No dials to set, no levers to pull. The punched card does it all in the new BUTLER XK1 Electronic Batcher.

Selection, proportioning, filling, weighing and discharge of 6 aggregates, 3 types of cement — plus water — are automatic and completely interlocked. Every discharged batch is correct — to a split pound . . . Another feature never before offered: The electronic controls also compensate for moisture in sand or aggregates — and further, compensate for that compensation.*

*NOTE: To the mathematically minded: For example, 5% moisture in the whole is also adjusted for the correlary percentage in the adjustment. In other words, it integrates successive increments.



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### Batching at 186,000 miles per second.

The BUTLER XK1 Batcher combines the accuracy and sensitivity of weight control, the flexibility of punched card systems and the speed of electronics, which is the speed of light.

### Virtually infinite batching selections.

From the holes punched in the card, the electronic control unit predetermines ingredient type, desired weight for each ingredient and the sequencing. An astronomical number of combinations of batch proportion is instantly available to the operator. A batch may be repeated at once or next year with equal ease. With the proper auxiliary equipment, bookkeeping, pricing and invoicing could also be handled from the same punched card.

### Permanent, legal record.

Those cards constitute a permanent file instantly accessible for repeat orders. Further, the cards are tamper-proof, legal records of the exact weights and proportions of materials in every batch. Successive batching of the same combination is simply a matter of touching the starting button after each cycle.

### Quick, easy maintenance.

Maintenance of the electronic equipment is so simple that any local radio repairman is perfectly capable. Moreover, unitized circuits permit any element to be replaced as quickly as a light bulb, so that it can be serviced at leisure.

# You Produce Concrete . . .

## TAKE a LONG, CLOSE LOOK at this CARD

### One man for a two-man job.

The control cabinet can be located in the dispatcher's office — at a distance from the plant — and the dispatcher can operate the batchers directly.

### New Horizons.

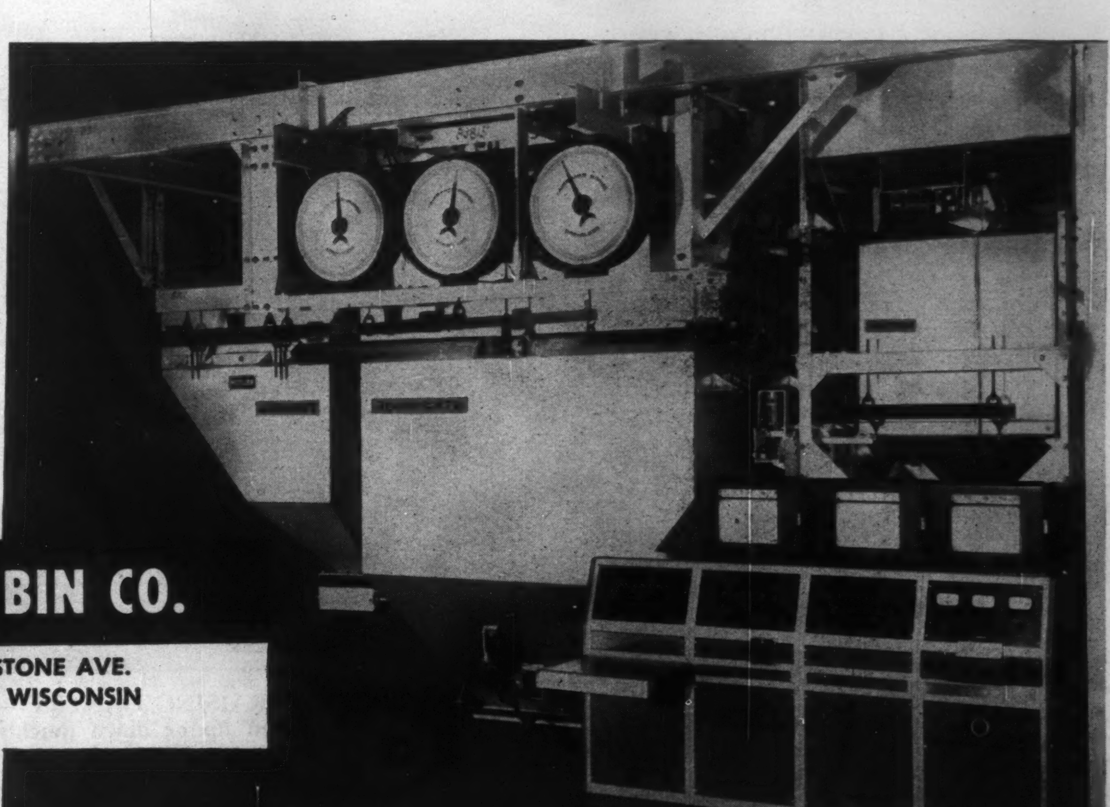
This great BUTLER development is of revolutionary importance to those in the concrete industry who are concerned with the complete integrity of their product and who wish to provide new horizons of economy, accuracy, flexibility, sensitivity and speed for the benefit of themselves and those whom they supply.

### As An Historical Note.

The first BUTLER XK1 Electronic Batcher was developed by the Butler Bin Company with its vast experience in batching problems together with Fairbanks-Morse and Company, Electronics Division, which has pioneered and established leadership in the electronics field. It has been installed at the Cleveland Builders Supply Company in Cleveland, O.

### You, too, can benefit.

Existing concrete plants can readily be converted to BUTLER XK1 equipment, no matter what make of your plant. Your Butler Engineer will be glad to supply all data — but please, make your inquiry on your letterhead.



**BUTLER BIN CO.**

947 BLACKSTONE AVE.
WAUKESHA, WISCONSIN

# Now!

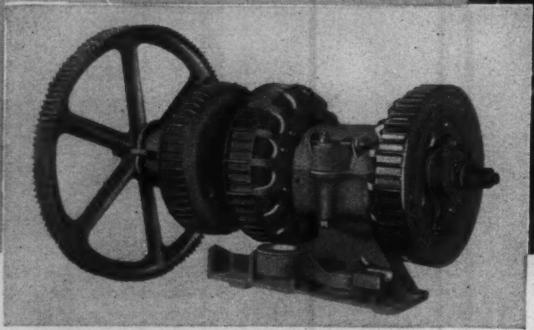
## CUT OPERATING COSTS

### A Big 2 Cu. Yd. Machine Designed Especially For Fast, Easy, On-The-Job Conversion

**THE "RIGHT" SIZE** — Big and strong enough for impressive yardage in rock, shale and dirt. Small enough to travel easily on a rail car without major dismantling. Gets around easily in close quarters.

**EASY FIELD CONVERSION** — Easily convertible in the field from shovel to dragline, clamshell, crane, hoe or pile driving service.

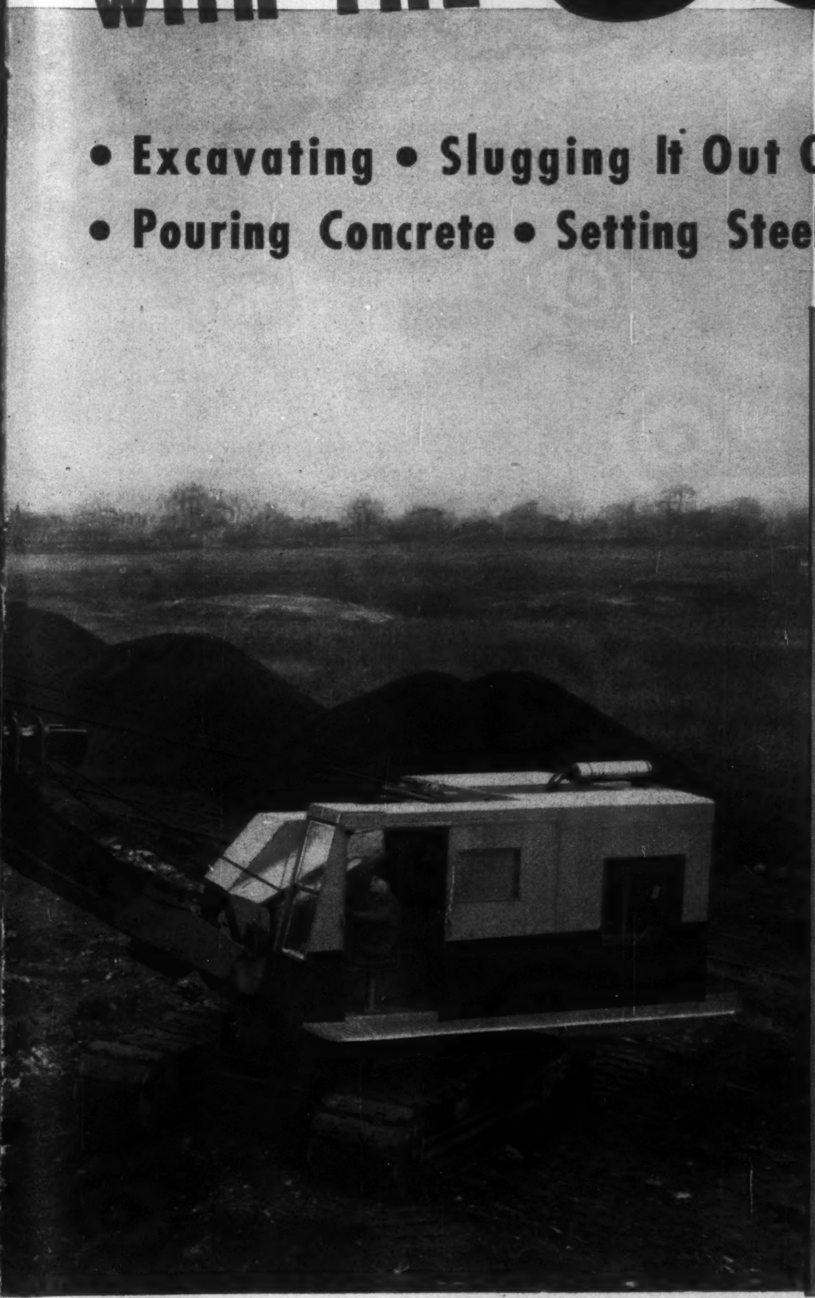
**TORQUE CONVERTER** — Automatically gives operator extra torque as needed, extra speed when load is light. Protects machinery from shock. Makes all-around better use of available engine power.



**NEW, SELF-COOLING SWING CLUTCHES** —The use of aluminum friction shoe carriers with fins and air passages on clutch housing and large holes in the friction housing assure cool performance.

**SELF-RAISING GANTRY** — Powered up or down quickly. High, retractable gantry decreases stress on boom for crane work.

# with THE 83-M



- Excavating • Slugging It Out On The Rock Pile
- Pouring Concrete • Setting Steel • Driving Piling

## FEATURES THAT COUNT!

A BIG CRANE — Handles 60 tons on 50′ boom at 12′ radius. Wide crawlers on 12′ 11″ centers available for extra stability.

WORM TYPE BOOM HOIST — "Power up and power down" boom hoist optionally available to permit simultaneous propelling or swinging and boom hoisting.

THIRD DRUM—An optional third drum permits hanging suspended leads, handling of piling, snaking in or snubbing loads or for use as a high-speed boom hoist.

AIR CONTROL SPEEDS PRODUCTION — Only 12 pounds of hand pressure on the compensating-type air control valve releases full machine power for increased production, reduced operator fatigue.

ANTI-FRICTION BEARINGS — Roller or ball bearings, sealed against dirt and fitted for easy lubrication, at all principal friction points. Gears run in oil bath.

OUTSTANDING CRAWLERS — Self-cleaning, non-clogging crawlers never need attention. Belt tension easily adjusted.

*See your nearby distributor today.*

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POWER SHOVELS FROM ½ TO 60 CUBIC YARDS
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TRUCK CRANES • MOBILCRANES • LOG LOADERS

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ACCO
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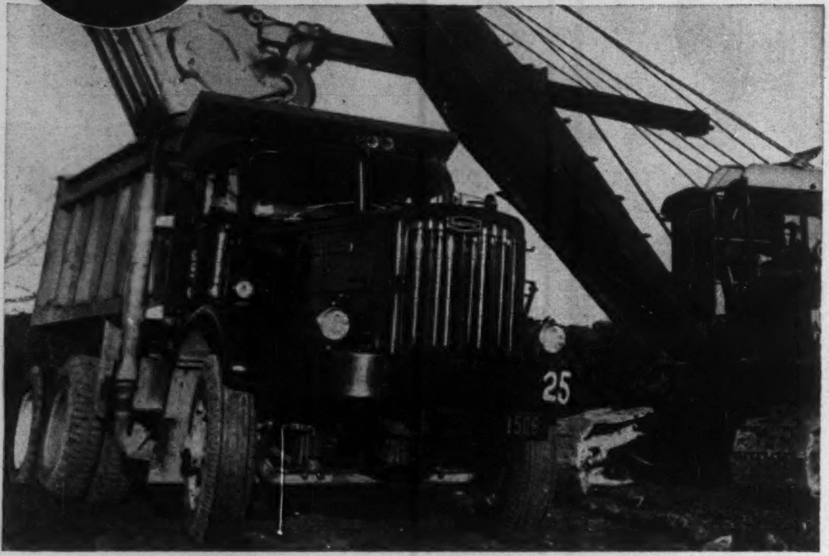
Tru-Stop Brakes Used on Construction Equipment



- Emergency Brakes for Trucks, Motorized Equipment
- Cable Drum Brakes for Cranes, Shovels

**Here's Why:** TRU-STOP disc type brakes have long been recognized as the outstanding choice for emergency brakes on heavy duty trucks and tractors. Their outstanding advantages are now causing them to be used to brake cable drums on cranes, shovels and other construction equipment.

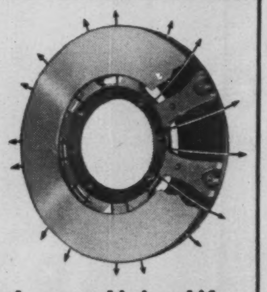
**Real Emergency Brakes.** On motorized equipment TRU-STOPS *are real emergency brakes—not just parking brakes.* They serve as auxiliary brakes on long down-grades and can bring the vehicle to a quick stop if service brakes suddenly fail. They prevent accidents by insuring quick positive stops in emergency situations.

**Positive Parking Brakes.** TRU-STOPS hold safely on steep grades—prevent "parking brake" accidents.

**Lower Maintenance Requirements.** TRU-STOP design simplifies adjustment or relining, decreases maintenance frequency. In truck or bus applications TRU-STOPS are normally mounted on the drive shaft. Relining or adjustment is a simple job for any mechanic with ordinary tools. It is not necessary to drop the drive shaft.

Specify TRU-STOPS for factory installation on your next truck, tractor, crane, shovel or other piece of equipment.

*Write for literature describing application of TRU-STOPS to your particular equipment*



**Longer Lining Life**
- The terrific heat generated in braking cuts lining life. TRU-STOPS quickly dissipate this heat. Most of the disc is exposed to the air even during braking. And a cooling jet of air circulates through the disc, prolongs lining life.

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Brakes

## READER COMMENT

### The ENR Highway Report

SIR: At the last meeting of our Highway Committee in Washington on January 7, we were presented with a copy of the "Engineering News-Record" devoted to the highway problem.

The Committee asked me to write to you to express its appreciation for the outstanding job you have done, and to thank all of your staff who participated in it.

We are convinced that it will be very helpful indeed to the program as a whole.

LUCIUS D. CLAY,
*Chairman, President's Advisory Committee for National Highway Program,*
*The White House,*
*Washington, D. C.*

SIR: My heartiest congratulations for the grand job on "A Grand Plan for Roads" in your December 30, 1954 issue. This is one of the finest reports of its kind that I have ever seen. It must have required a tremendous amount of research work, and will be greatly appreciated by highway engineers, officials and others throughout the country. I assure you it will be kept on my desk for frequent references.

BEN H. PETTY
*Professor of Highway Engineering*
*Purdue University*
*Lafayette, Ind.*

SIR: Congratulations on your report, "A Grand Plan for Roads", which appeared in the edition of December 30, 1954.

I know what a stupendous task it was to collect the vast amount of information you had to have and then arrange, edit and present it in readable and interesting form. You have done an excellent job, and this issue of your magazine will be of inestimable assistance to a better highway program for the future.

S. D. BECHTEL
*President, Bechtel Corporation,*
*San Francisco, Calif.*

SIR: The detailed, complete, enlightening and excellent report "A Grand Plan for Roads" is without a doubt the best analysis of the national road picture ever printed.

GERALD BOGAN
*Executive Secretary*
*Iowa Good Roads Association*
*Des Moines, Iowa*

(*Continued on page* 10)

# A Big Grader for Less Money

# ADAMS "440"

**A husky 100 hp. machine that offers a new value in the heavy-duty class**

## costs you less to own, less to operate

The Adams "440" is designed for owners who want heavy-duty capacity and performance, yet must keep a sharp eye on costs.

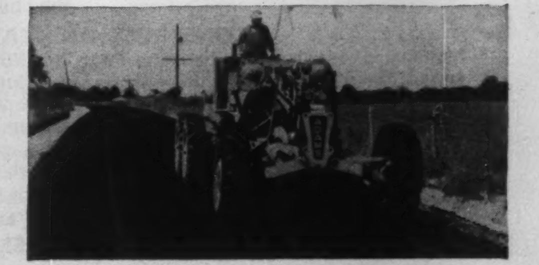
This powerful machine handles a wide range of heavy-duty applications: road construction and maintenance—bank sloping—ditch cutting—scarifying—sub-grading—road mixing—bulldozing—snow plowing, etc.

Like all Adams Motor Graders, the "440" features an exclusive combination of time-saving and work-producing advantages: 8 Forward Speeds, up to 25 mph.—3 Creeper Speeds, ¼ to 1¾ mph.—4 Reverse Speeds, up to 13 mph. . . . plus Easy-Shifting Constant-Mesh Transmission—Dual Braking System—Rubber-Mounted Engine.

Ask your Adams dealer to demonstrate how the "440" can speed production and cut costs—*for you!*

**ADAMS DIVISION, LeTourneau-Westinghouse Company, Indianapolis, Indiana**

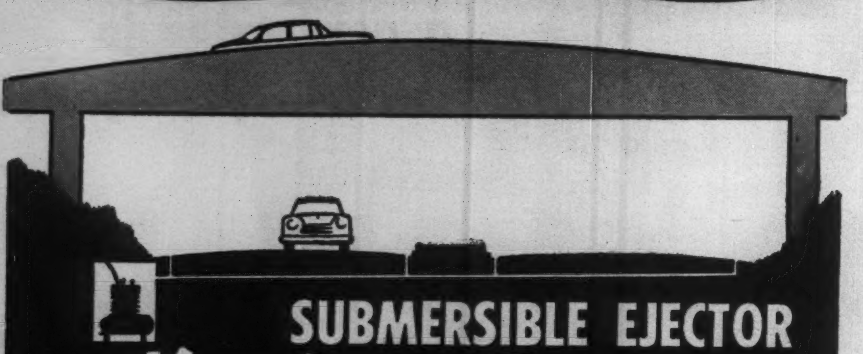
Easily handles all average road building



High-speed mixing and spreading of blacktop

*Make your next motor grader an* **ADAMS**

For UNDERPASS DRAINAGE



SUBMERSIBLE EJECTOR
New! with 6" DISCHARGE!
A "Big Brother" to the famous 3" and 4" Pumps

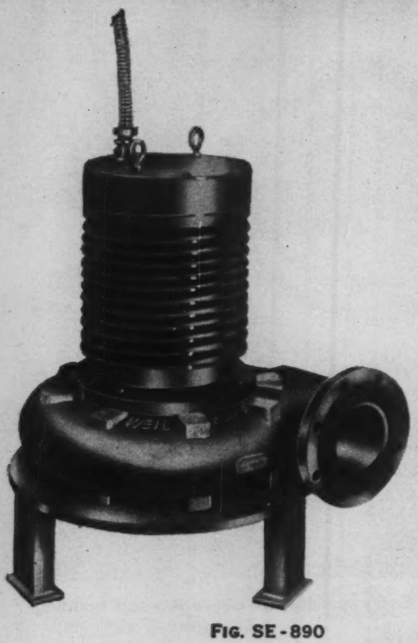


FIG. SE-890

NO PUMP HOUSE REQUIRED
Capacities to 2000 GPM

The new ejector designed for completely submerged operation is constructed with the same engineering features that have made the 3" and 4" Submersible Ejectors so trouble-free and efficient. It can be supplied with 5" or 6" discharge, with heads to 70 feet and capacities to 2000 GPM.

The new pump has been developed to answer the need for low cost installations where large quantities of water must be drained quickly. It is particularly adapted for highway underpass drainage and is designed for continuous operation during flood periods. The NON-CLOG Impeller will handle 3½" solids.

Can be supplied with control systems having no moving parts in the pits. Multiple installations are furnished with controls to program the operation for load requirements.

CONSTRUCTION FEATURES:
Motor and bearings are hermetically sealed. The motor, housing, drive shaft and impeller — all of the working parts — are an integral and interchangeable unit and can be removed without disturbing the piping. They are not subject to corrosion, deterioration or injury when standing idle—regardless of weather conditions. The NON-CLOG Impeller is of manganese bronze; pump shaft stainless steel; permanently sealed ball bearings; volute type casing of nickel iron; motor windings of special design and construction are permanently non-corrosive; motor housing machined and sealed to exclude dirt and water.

Ask for Bulletin SE 860 C

weil PUMP CO.

1528 NORTH FREMONT STREET • CHICAGO, ILLINOIS

## READER COMMENT

SIR: Certainly the "Staff Report on our Most Ambitious Road Program" is a masterful presentation of information of vital importance and so edited as to be understandable not only by those directly interested and engaged in the industry but also by the millions of citizens who, while realizing the need for adequate highways, have little knowledge of the problem involved or of the action now proposed as a means towards solving it.

ROBERT E. O'CONNOR
*J. C. O'Connor & Sons, Inc.*
*Fort Wayne, Ind.*

SIR: The comprehensive staff report on "A Grand Plan for Roads" would be excellent supplementary material for our course in highway engineering. Are reprints available?

L. W. MAHONE
*Assoc. Prof. of Civil Engineering*
*University of Arkansas*

SIR: Congratulations on outstanding presentation of Nation's road program. Please send return airmail four additional copies to be distributed to our legislative committees now in session as well as to our Governor.

E. V. MILLER
*State Highway Engineer*
*Idaho Department of Highways*
*Boise, Idaho*

SIR: I am not an habitual "letter-writer-inner", but feel that your report "A Grand Plan for Roads" is such an outstanding piece of work that we in the field of highway surveys, design and construction would be remiss if we did not tell you about it. It is the best presentation of matters surrounding our highway problems that I have ever seen.

CHARLES C. REDMAN, JR.
*Consulting Civil Engineer*
*Kennett, Missouri*

### Fire Losses

SIR: I was particularly interested in the comments in your editorial on 1953 fire losses (ENR Nov. 18, 1954) as to the effect of the General Motors Livonia fire on the national statistics.

I have always felt that statistical figures may be booby traps if not carefully examined. For this reason I have always divided the yearly fire loss figures by the ENR Building Cost Index for the same year to arrive at a loss for the same value of the dollar. Then, dividing that computed figure by the population figure of the country for the year involved, an annual adjusted dollar fire loss per capita is obtained.

(*Continued on page 12*)

# GAHAGAN ANNOUNCES

**A new, surer, faster and cheaper way to explore sub-surface strata in planning sites for highways, dams, power plants, big buildings, bridges, airfields, tunnels, reservoirs, water supplies.**

## GAHAGAN GEOPHYSICAL SURVEYS

Test borings are a slow and costly way to find out what lies beneath the surface of land or water—as who should know better than Gahagan, with over 50 years in the hydraulic dredging business.

Quietly, for the past two years, we have been working with some of the top U. S. engineering firms who have turned to a new and better system—Gahagan Geophysical Surveys, utilizing seismic wave measurement.

This principle, of course, is an old story in locating earthquakes and prospecting for oil at depths of 1,000 to 20,000 feet. But it has not been commercially practical for shallow reconnaissance up until now, with the development by Gahagan of refined techniques, portable equipment and expert interpretation.

### What a Geophysical Survey Can Do for You

As developed by Gahagan, a Geophysical Survey gives an accurate and continuous picture of hardpan and bedrock stratas and the depths at which these will be found. In addition, it usually is able to indicate varying characteristics of the materials in the overburden, whether sand, gravel or clay. Surveys can be made under water as well as on land. Accuracies within 1 to 5% of actual can be obtained. Savings in time and money are enormous. Sub-surface conditions over a sizable area can be determined at a cost often no greater than the cost of one test boring. For the Connecticut Expressway, now under construction, a single Gahagan Geophysical Survey crew took only five weeks to measure rock depths in the cuts of a proposed 129-mile highway location.

### Highly Trained Specialists

The accuracy of any scientific study depends upon the calibre of the men who do the work and interpret the findings. Backing up the Gahagan field crews of trained specialists as Chief of Operations is Rev. Daniel Linehan, S.J., Jesuit priest and famed geophysicist who heads Boston College's Weston Observatory. In addition, well known geophysical experts of the oil industry are used as consultants by Gahagan.

**SOME SURVEY USERS**

**Shelton Well Field, Bridgeport Hydraulic Company**
•
**The Connecticut Expressway, Ammann & Whitney, Engineers**
•
**Casco Bay Power Project, Central Maine Power Company**
•
**Delaware River Power Project, Jackson & Moreland Co., Engineers**
•
**Southeast Expressway, Mass., Massachusetts Dept. of Public Works**
•
**Narrows Bridge Site, Brooklyn & Staten Island, N. Y., Ammann & Whitney, Engineers**
•
**125th Street Bridge Site, N.Y.C., Ammann & Whitney, Engineers**
•
**Narragansett Bay, New England Power Service Company**
•
**Baker River (Wash.) Hydraulic Development, Stone & Webster, Engineers**
•
**St. Lawrence Power Project, Sanderson & Porter, Engineers**
•
**Massachusetts Turnpike, Howard, Needles, Tammen & Bergendoff, Engineers**
•
**The Connecticut Expressway, Loomis and Sullivan, Engineers**

### Who is Gahagan?

Gahagan Geophysical Surveys is a division of Gahagan Construction Corporation, founded in 1898 and today one of the top firms in the hydraulic dredging field in this country and overseas. With one associate, Gahagan recently dredged a 170-mile channel 26 feet deep in the Orinoco River, S. A., so that oceangoing ore boats could carry iron ore direct from Venezuela to the new U. S. Steel plant on the Delaware at Morrisville, Pa.

### Write, Wire or Telephone

If you have a sub-surface problem on a construction project, get in touch with us at once. We may be able to save you really big money as well as much time and many headaches. Our crews cover the country. No job is too big for us to handle, and none too small to talk over. Address Ken Sandbach, Vice President, Geophysical Survey Division, Gahagan Construction Corporation, 90 Broad St., New York 4, N. Y. Telephone: Whitehall 3-2558.

Compacting sub-base
on the Ohio Turnpike.

DO IT FASTER — BETTER and CHEAPER with the JACKSON VIBRATORY COMPACTOR!

**MACADAM CONSTRUCTION:** All around the country on major paving projects the JACKSON VIBRATORY COMPACTOR is being hailed as the most advantageous equipment ever developed for achieving specified density in rock, slag, soil-bound macadam, gravel and sand base courses. Uniform compaction to final density is obtained in rock macadam courses up to 12″ in minimum time. The dry fines are quickly vibrated into all voids, filling them chockfull, solidly, from top to bottom of the course. Standard width is 13′,3″. Working speeds up to 60 FPM, reverse travel: 5½ MPH.

**SUB-BASES, GRANULAR SOIL-CEMENT PAVING and SAND FILLS:** It is equally efficient on gravel sub-bases and granular soil-cement paving or base course construction. And it's a bear-cat for compacting sand fills such as bridge approaches, since it quickly achieves desired density and individual units may be subtracted and even fitted with operating handles to suit every condition and to get into the really tight places.

**PAVEMENT WIDENING:** In any granular material used in flexible base course widening specified density is accomplished in one pass with the compacting units towed in tandem at the side of the tractor. Interchangeable bases from 12″ to 26″ wide may be substituted for standard 26″ bases to suit requirements.

*By all means investigate this time and money saving equipment*

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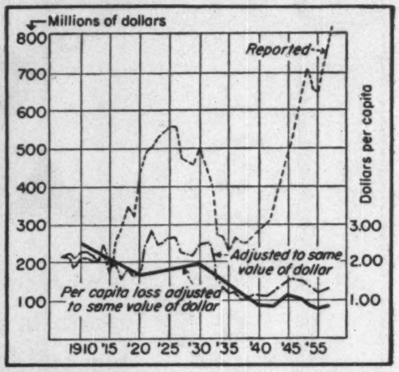
## READER COMMENT



**DOWNTREND** is shown for annual fire losses when measured on a per capita basis in constant dollars.

A graphic portrayal of this latter figure gives an entirely different picture of fire losses—they have shown a considerable decrease since 1932. It is the only way I know that will show the beneficial work by those working for fire prevention and the results of the more effective extinguishing methods used by fire fighters with improved equipment.

John A. Waterman
*Poland, Ohio*

## CALENDAR

**Association of Asphalt Paving Technologists,** annual meeting, Jung Hotel, New Orleans, La., Feb. 7-9.

**American Society of Civil Engineers,** convention, U. S. Grant Hotel, San Diego, Calif., Feb. 7-12.

**Military-Industrial Conference,** sponsored by The Society of American Military Engineers, Conrad Hilton Hotel, Chicago, Feb. 10-11.

**National Society of Professional Engineers,** spring meeting, Hotel Charlotte, Charlotte, N. C., Feb. 18-19.

**American Concrete Institute,** annual convention, Hotel Schroeder, Milwaukee, Wis., Feb. 21-24.

**Annual Highway Engineering Conference** of the University of Colorado, Boulder, Feb. 24-25.

**Concrete Contractor's Association of Greater Chicago,** Mid-West Concrete Exposition, Navy Pier, Chicago, Feb. 24-26.

**Association of Highway Officials of the North Atlantic States,** annual convention, Hotel Traymore, Atlantic City, N. J., March 2-4.

**American Society of Photogrammetry and American Congress on Surveying and Mapping,** consecutive meetings, Shoreham Hotel, Washington, D. C., March 6-12.

**National Association of Corrosion Engineers,** annual conference, Palmer House, Chicago, March 7-11.

**American Concrete Pipe Association,** annual convention and meeting, Sheraton-Plaza Hotel, Boston, March 9-12.

**Associated General Contractors,** Roosevelt Hotel, New Orleans, La., March 14-17.

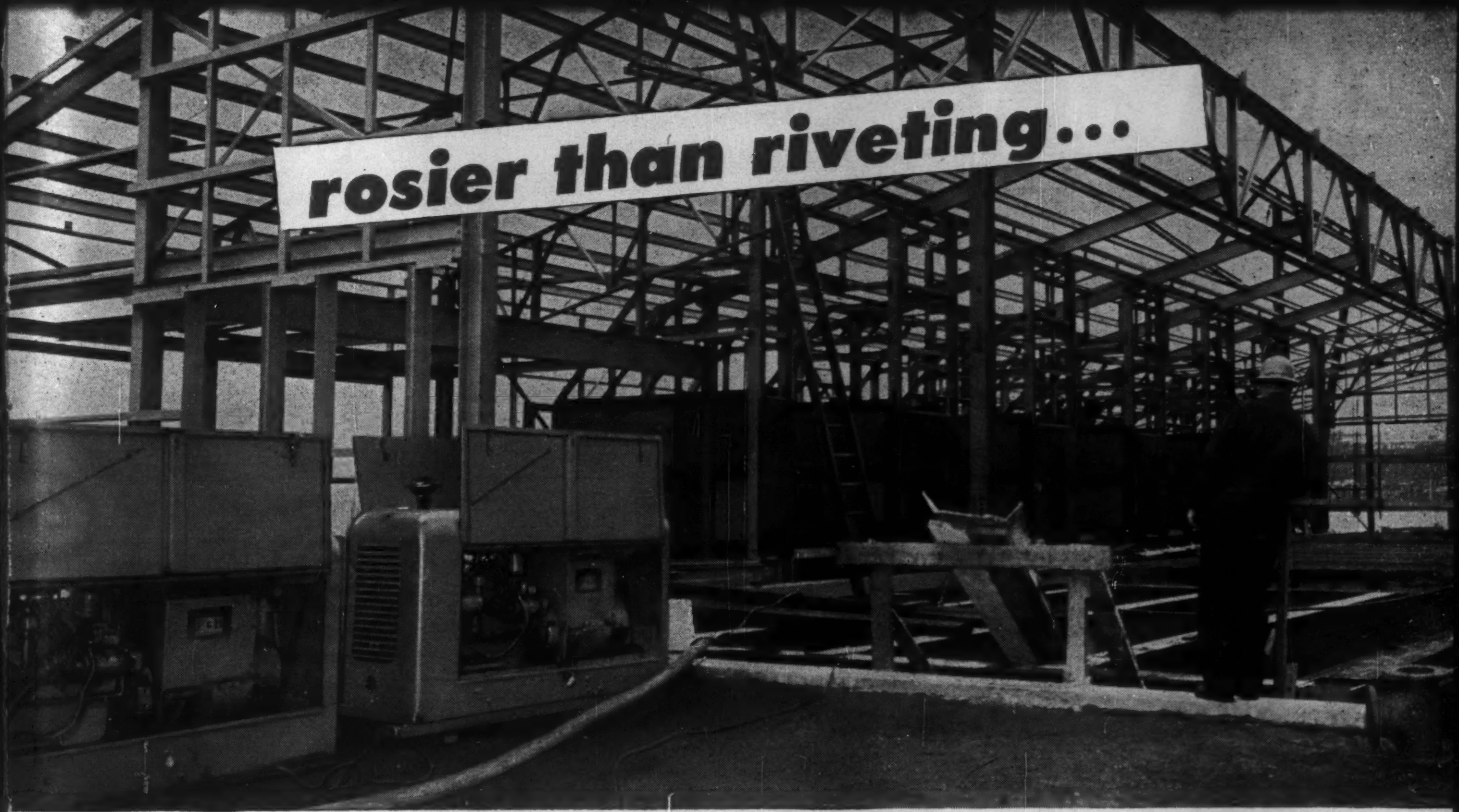


PHOTO COURTESY HARNISCHFEGER CORPORATION, MILWAUKEE, WISCONSIN

# *Flexibility of Modern Chrysler High-Speed Industrial Engines Proved in 375 Ampere Arc Welder*

Here pictured in construction is a New York City garbage disposal dump located on the North River near 135th Street. When completed, trucks will drive up its ramps and discharge loads into cubicles located over scows. Scows will then convey refuse to a watery grave.

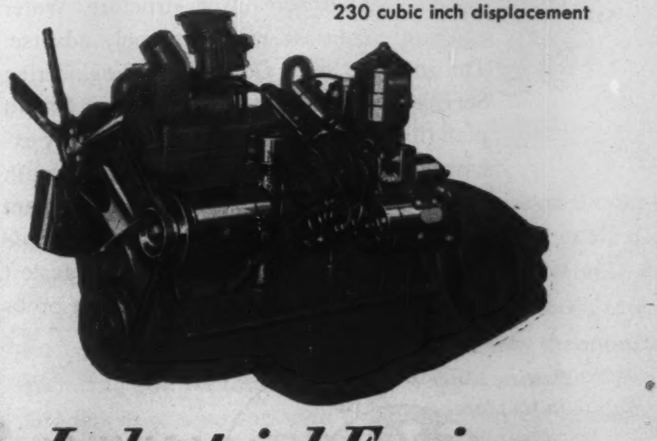
On this job, three P&H WN-302 Arc Welders have been putting in five 8-hour days every week welding cubicles, not only joining steel members but also giving them added strength for years to come. Chrysler Ind. 30 Engines power Harnischfeger 375 Amp. Welders supplying enough extra power to compensate for possible generator loss and still provide reserve for overload.

Within their 230 to 413 cubic inch displacement range, Chrysler Industrial Engines offer the high-speed performance construction equipment demands. Each engine is a compact, relatively small unit which will permit installation in virtually any type of construction equipment regardless of size or silhouette. Besides size, weight and cost advantages, should it become necessary, Chrysler Industrial Engines offer fast, easy parts replacement service with dealers located all over the country.

In considering power for your equipment, remember Chrysler offers its industrial engines built to meet the needs of the equipment with such items as gyrol Fluid Coupling; Chrysler Industrial Torque Converter; 3-, 4- or 5-speed transmissions; heavy-duty clutch and power takeoff; velocity, belt or gear-driven governors; gas, butane and propane burning carburetors available for factory installation.

With Chrysler Power too, you do not pay a premium. Production-line methods adapted to specialized industrial engine building provide a custom-built Engine at mass-production prices. See a Chrysler Industrial Engine Dealer or write: **Dept. 92, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.**

CHRYSLER INDUSTRIAL 30 Engine
230 cubic inch displacement

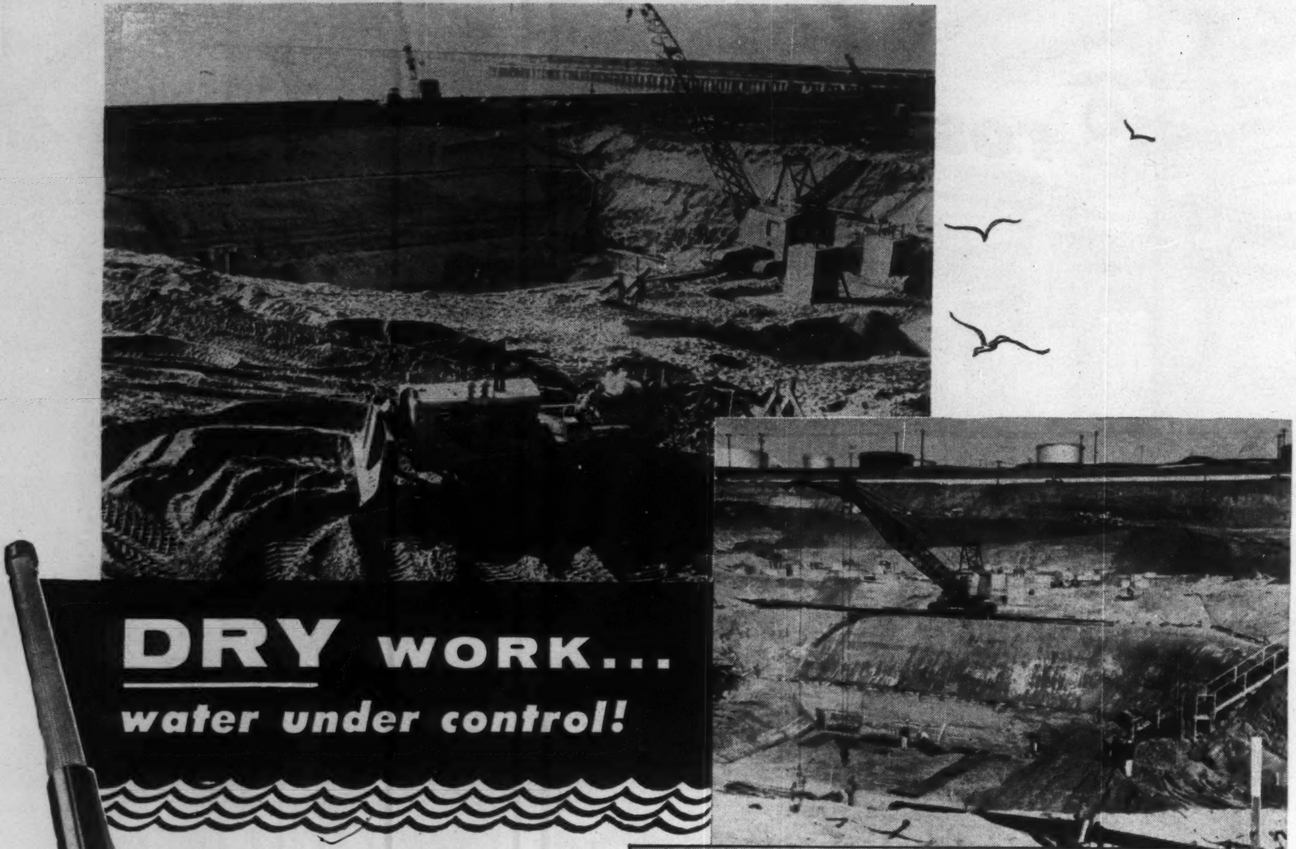


**CHRYSLER** *Industrial Engines*

INDUSTRIAL ENGINE DIVISION • CHRYSLER CORPORATION

HORSEPOWER WITH A PEDIGREE

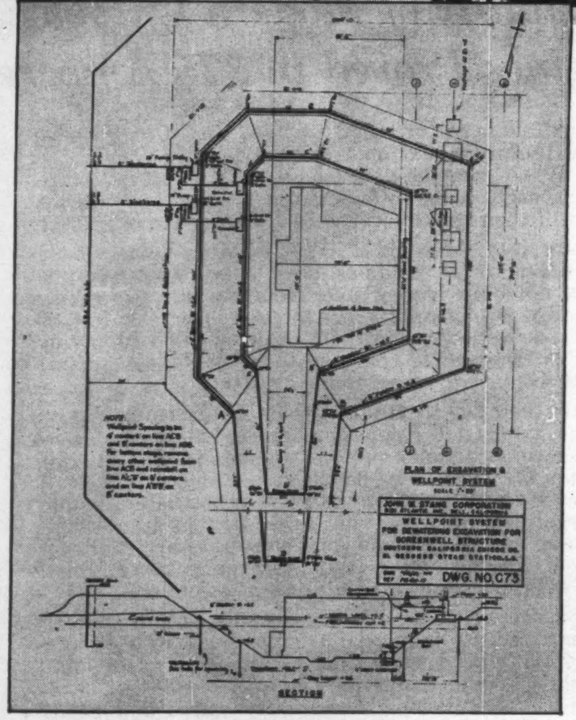
AGRICULTURE • INDUSTRY • CONSTRUCTION • OIL FIELDS



**DRY WORK...**
*water under control!*

**STANG wellpoint job in beach sand...Down to 60 feet—30 feet below water level...*only 500 feet from ocean!***

Plans for an oceanside steamplant power station called for the construction of a reinforced concrete screenwell structure. Water and soil conditions were extremely adverse. The John W. Stang Corporation Engineering Service was called in. The resultant STANG plan (illustrated) *provided* completely dry excavation from the surface to a 60 foot depth ... *utilized* dry-land excavation equipment 30 feet below water level ... *made possible* the use of low-cost concrete forms. For fastest low-cost, construction when water is a problem ... call STANG!


PLAN OF EXCAVATION & WELLPOINT SYSTEM
JOHN W. STANG CORPORATION
WELLPOINT SYSTEM FOR DEWATERING EXCAVATION FOR SCREENWELL STRUCTURE
DWG. NO. C73
SECTION

*Putting water in its place*

*...anyplace!*

**JOHN W. STANG CORPORATION**

**Engineers and Manufacturers of Unwatering Equipment, Wellpoint and Pumping Systems**
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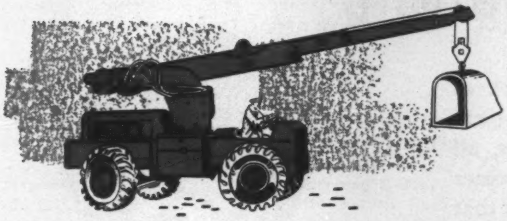
#551

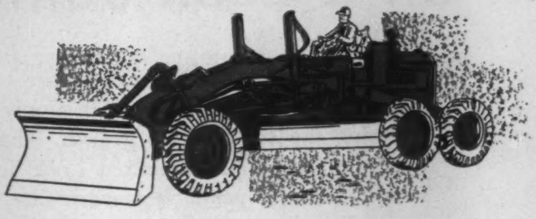
THIS JOB...
THAT JOB...
*YOUR* JOB...

# A-W EQUIPMENT GETS IT DONE

AUSTIN-WESTERN

**Whatever the problem . . . whatever the job . . . those pictured above, or dozens of others, you can do it better with Austin-Western Power Graders, and the new tractor- and truck-mounted Hydraulic Cranes.**





It's the LIVE BOOM that puts the A-W Hydraulic Crane out front in the performance parade . . . live power with instant response for all boom movements . . . extending and retracting, raising and lowering, and rotating. Fingertip hydraulic control handles delicate spotting jobs with superb precision. No other mobile crane has a boom so completely "alive"... no other outdoor-indoor crane will handle so many jobs, so well.

All-Wheel Drive provides 30% more Power-at-the-Blade; keeps the front end of the grader under control at all times. All-Wheel Steer makes the grader twice as maneuverable. Rear Steer shifts the rear truck from side to side, for better traction and smoother operation. The tougher the job, the more outstanding the performance of A-W "88" and "99" Power Graders in comparison with front steer, rear drive machines.

**Austin-Western**
**Power Graders · Motor Sweepers**
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Construction Equipment Division

*Manufactured by*
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*Subsidiary of Baldwin-Lima-Hamilton Corporation*
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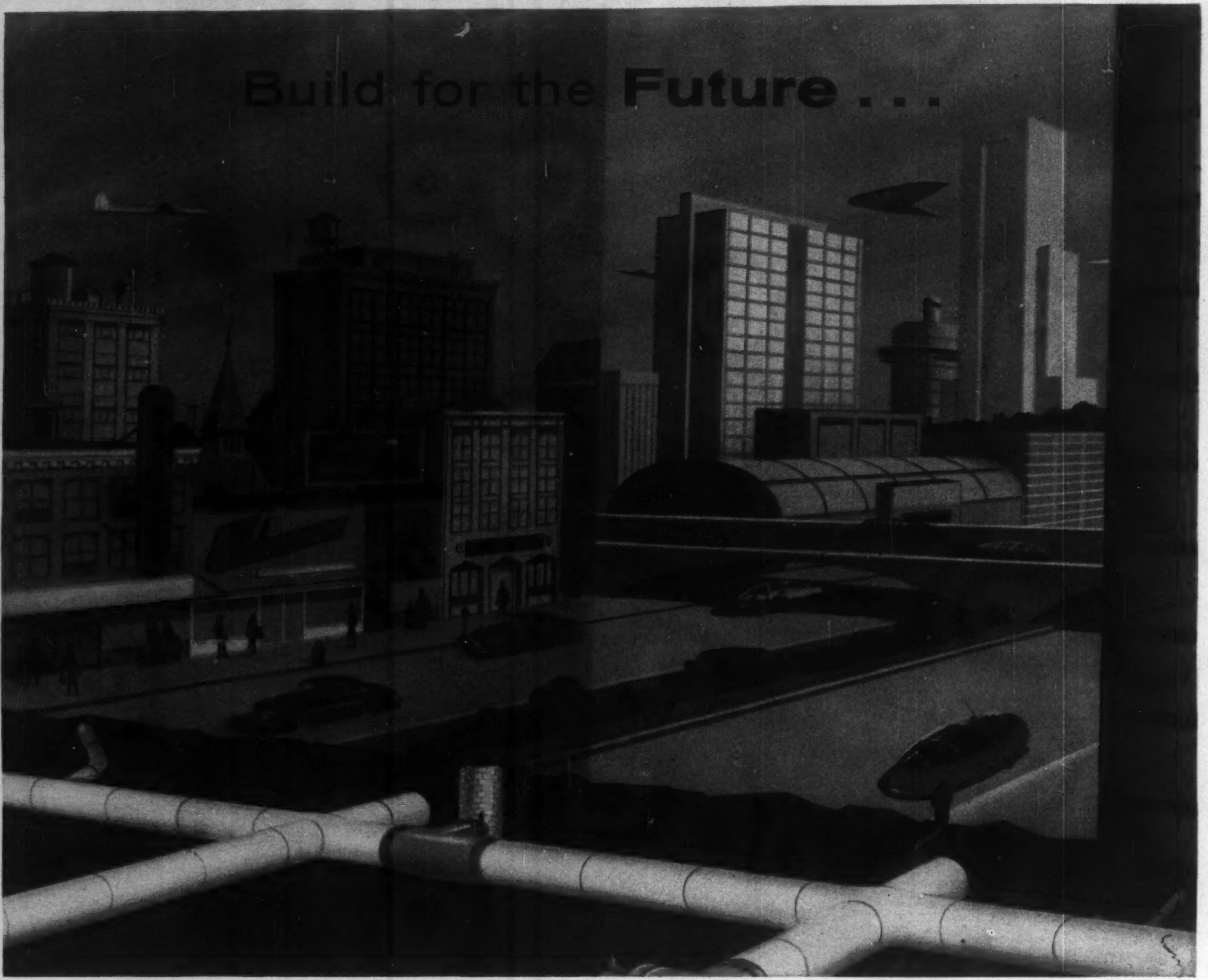

# on a Lock Joint "Foundation"

City planners and engineers are taking a long, hard look at everything connected with water supply — the most serious problem affecting the city's future growth. That's why so many cities, all over the world, have selected Lock Joint Pressure Pipe's greater security, more dependable performance, longer life. They know that their plans for meeting future water supply requirements must include pipes whose high carrying capacity will be as great scores of years from now as they are today.

In addition to a solid foundation for the water supply system of the future, Lock Joint Pressure Pipe offers important economies — low first cost, economical installation, low pumping costs and negligible maintenance charges.

**LOCK JOINT PIPE COMPANY**

**East Orange, New Jersey**

Sales Offices: Chicago, Ill. • Columbia, S. C. • Denver, Col. • Detroit, Mich. • Hartford, Conn. • Kansas City, Mo.

ENGINEERING NEWS-RECORD

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# THE CONSTRUCTION WEEK

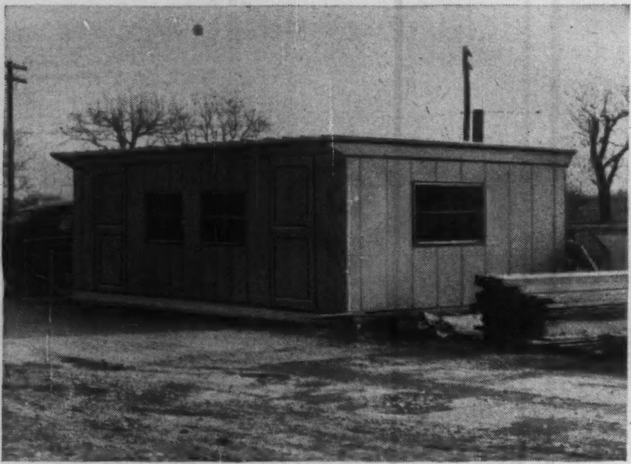
**NEW PREFAB PARKING GARAGE**—Fabricators of the record-breaking 1,572-ft TV tower at Oklahoma City are now coming out with a design for a prefabricated all-steel parking garage. According to Dresser-Ideco Co., Columbus, Ohio, the proposed garages will have as many as six floors, which will be serviced by elevators traveling both vertically and horizontally at the same time.

**MORE FINGERS IN THE PIE**—A New Jersey legislator feels that, if tolls are to be retained on the Delaware Memorial Bridge after it's paid for, his state ought to get a cut. And, to this end, he has introduced a bill that would authorize charging Delaware an annual license fee on that part of the bridge resting on New Jersey territory. The retaliatory move is based on the fact that Delaware highway officials are seeking approval to tap part of the toll revenues to build better approaches to the bridge, which crosses the Delaware River below Wilmington and links with the New Jersey Turnpike. Their proposal also calls for prolonging the collection of tolls after bond retirement, which is running way ahead of schedule (ENR March 25, 1954, p. 77).

**IDEA FOR EXPORT**—The bigger Latin American cities, with their growing number of car owners, ought to be ripe for U. S.-style shopping centers. At least this is the hope of Brenton C. Wallace, head of the Bryn Mawr, Pa., architect-engineer firm of Wallace & Warner, who has embarked on a five-week tour of South America to size up the prospects.

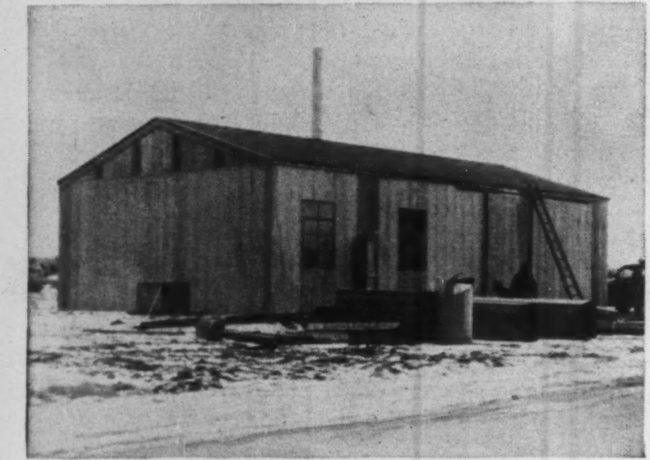
**WOULD WEAR TWO HATS**—A toll highway bill has been introduced in the Missouri legislature that would make members of the State Highway Commission also members of a proposed turnpike authority. The governor and state geologist would be nonvoting members. Last session of the legislature killed a toll-road measure primarily because it provided for a separate authority.

**ATOMIC POWER TO THE NORTH**—Canada expects to have its pioneer atomic power plant in the drafting-room stage, this spring, with the idea of having a producing unit by early 1958. Atomic Energy of Canada Ltd., Crown company set up by the government to operate Canada's Chalk River plant, will build the project jointly with a major utility firm. Hydro Electric Power Commission of Ontario, which is handling Canada's part of the St. Lawrence Power project, also is playing a leading role in the atomic power development work.



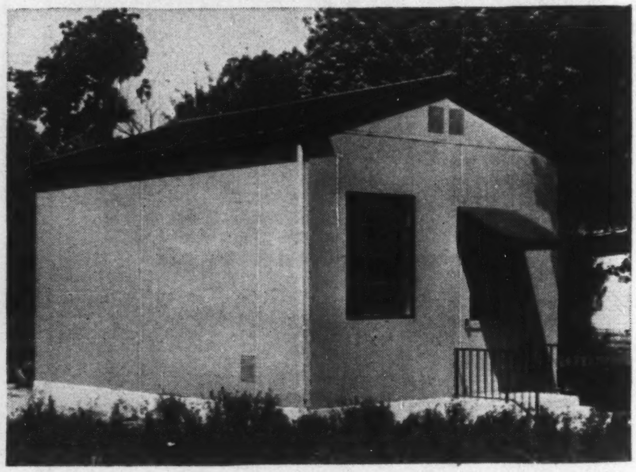
**VERSATILE.** Armco Buildings are designed as permanent structures, but are also easily dismantled and re-erected on new sites. This is one of ten used as field offices. They have been erected, dismantled, moved and re-erected many times without loss of material.

**FAST ERECTION.** After foundation was laid for this warehouse, it took less than 8 hours to erect walls and roof and install doors and windows. The completed Armco Building was 28′ wide, 50′ long, 12′ high. It went up at the rate of 3 square feet per minute!



**DURABLE.** This Armco Steel Building was first erected on another site in 1935. Two years later it was completely dismantled and re-erected at its present location. After twenty years, this durable, all-steel structure still looks neat and attractive.

**ECONOMY.** Specifications for a dial telephone exchange building required dryness, wind- and dust-tightness. This Armco Building met these needs and saved 26.3% of the cost of a masonry type of structure. Also, the Armco Building provided 9% more floor space.



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Armco Steel Buildings are economical, quickly erected, durable, and easily dismantled and re-erected. And the above photos and captions give you case-history evidence to prove it!

Unique STEELOX Panel construction features all Armco Steel Buildings. The panels fit together easily to form walls and roof and provide both structural support and smooth exterior. A small crew without previous erection experience can handle the job.

Armco Buildings are available in clear-span widths from 4′ to 40′, in almost any length. And with multiple-span structures, you can obtain practically any required width or length.

Write us for literature, recommendations and prices on the size of building you need. Armco Drainage & Metal Products, Inc., 4165 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

## ARMCO STEEL BUILDINGS

ARMCO ®

**Standard Corrugated Metal Pipe and Pipe-Arch • MULTI-PLATE Pipe, Arch and Pipe-Arch • Bin-Type Retaining Walls • Liner Plate • Steel Sheeting • Water Control Gates • Perforated Pipe • Foundation Pipe and Pile Shells • FLEX-BEAM Guardrail • Welded Steel Pipe • End Sections**

# WASHINGTON OBSERVER

**Credit restraints will be used if the construction boom gets out of hand,** a Federal Reserve Board official promised Congress this week. Winfield Riefler, assistant to the chairman of the board, told the Joint Economic Committee that it's too early to tell whether inflation in construction will become a real problem.

**"Housing terms are more liberal than they have ever been in the past,"** Riefler noted—and he thought this is a straw worth watching.

**Roy L. Reierson, of Bankers Trust Co.** said housing starts may be too high. He recommended that the President be given authority to boost downpayments on government-insured mortgages.

•

**Federal backing of more public power starts** and other power issues are getting big treatment from the Democrats. They count on this to help them in their drive for the White House next year.

**That's what's behind** that action of the Joint Atomic Energy Committee in reversing previous approval of construction of the $107-million Dixon-Yates power plant to supply AEC. The Democratic majority on the committee was well aware that the reversal action (after approval by the same committee in the previous Congress) is itself legally shaky. But the move keeps Dixon-Yates in the news as a handy potential campaign issue in the private-vs-public power debate that the Democrats want to keep alive.

**Congress may also be taking a look at the situation at Clark Hill Dam** between South Carolina and Georgia. Fight between Georgia Power Co. and co-ops there has held up use of power that should go to Georgia users. Federal officials are looking for an out, and may try to get a deal that would include the REA co-ops building a transmission line of their own to wheel the power.

**Atomic energy construction programs will get more thorough sifting** from new "Subcommittee on Authorizing Legislation" set up by Joint Atomic Energy Committee. It has a chance to check $90 million of new programs, including $64.6 million earmarked for firms trying to build reactors under AEC's program to get power from the atom as soon as possible.

•

**The new public works subcommittee of House Appropriations Committee** is here to stay. A big furor was raised when chairman Cannon revamped his subcommittee lineup, created the new public works subcommittee, and took the chairmanship himself. Republicans delayed naming their members to the new subcommittee, trying to help those Democrats who were rebelling.

**Democrats settled the thing,** however, with a little reshuffling inside the Appropriations Committee. One result: Interior subcommittee gets the money bill for Department of Agriculture's Forest Service, which has forest roads money in it.

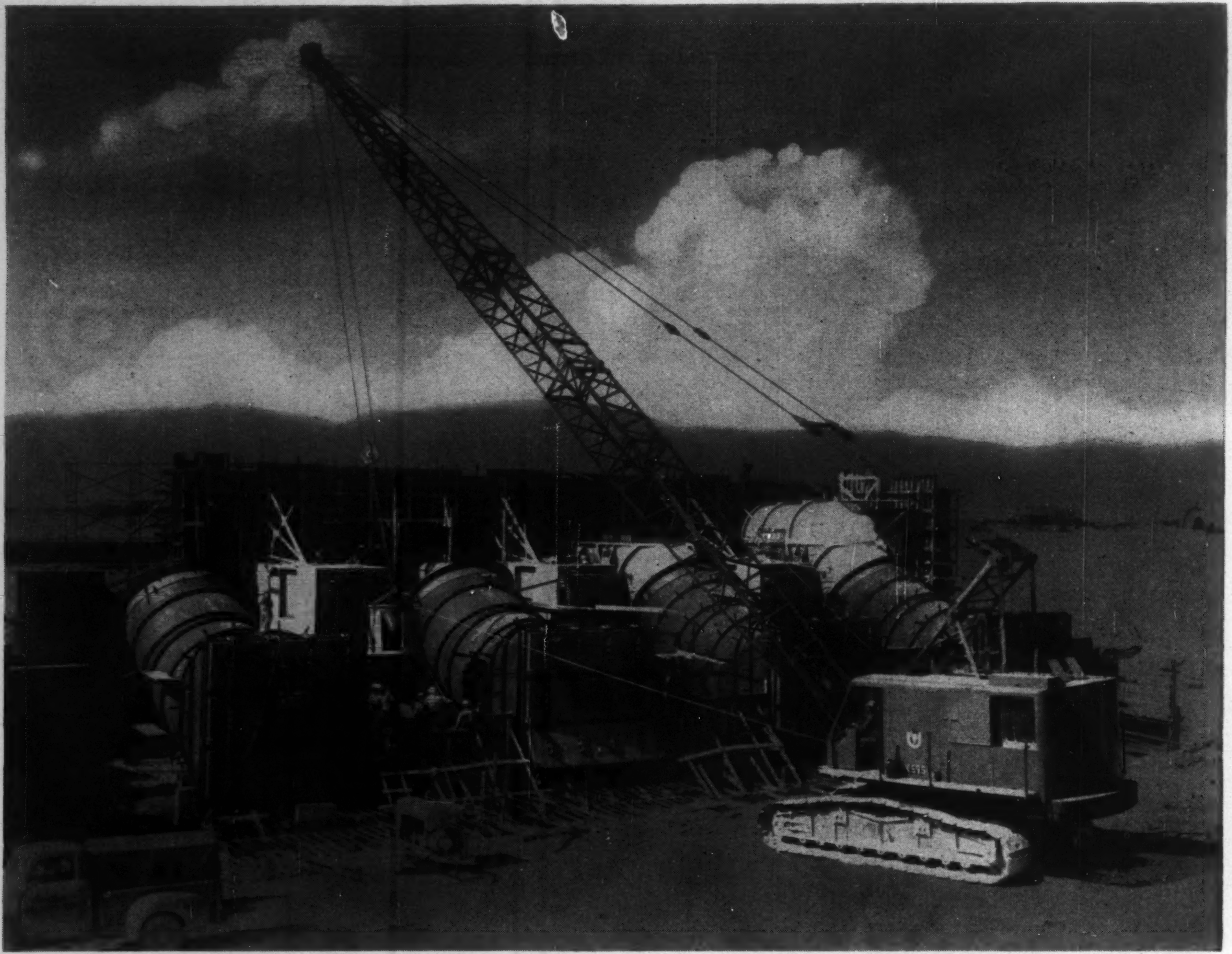
**New Public Works Committee is New Dealish** and will take on a strong public power line to combat Eisenhower's power policies.

**Senate Appropriations Committee will go along** with a similar committee of their own. They have to consider the bills in the form the House sends them over for Senate action.

•

**AFL building trades claim they're making headway** in the drive to oust John L. Lewis from highway construction work. In mid-winter session in Miami, officials of the carpenters, operating engineers, laborers and teamsters say they're getting more jobs for their members via a pact that permits them to bid lower for work with the promise not to indulge in jurisdictional disputes.

**New agreement reached last summer** (ENR Aug. 19, 1954, p. 29) is directed at Lewis' United Construction Workers. The UCW has moved in on highway construction, particularly in Pennsylvania, by underbidding AFL union wage scales and pledging no trouble over job assignments.



K-595 SPOTTING CONCRETE BUCKET—operator works with greater speed and safety because of greater "live" weight built into every Link-Belt Speeder. All-welded, stress relieved construction gives greater strength per pound. Alloy cast-iron clutch shells assure superior friction, longer lining life. Independent rapid boom hoist has power control up *and* down.

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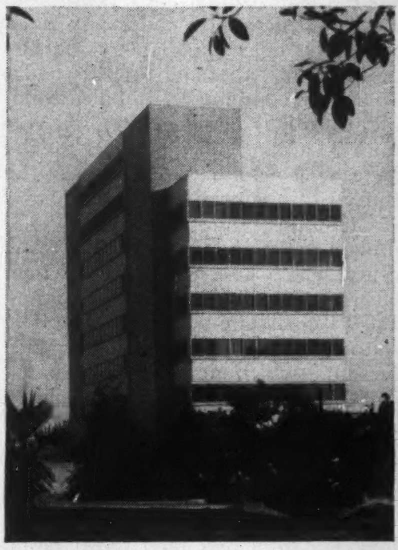


**LOS ANGELES** civic center adds a health administration building.

**DETROIT** builds an $88-million civic center and spruces up a rundown area.

**The urban building boom gets an added lift from civic centers as . . .**

# An Old Dream of City Planning Comes True

Civic centers are springing up at a rapid rate across the U. S. An ENR spot check of the trend shows that hundreds of millions of dollars of work is now under way, and substantially more is planned to start within the next year or so.

Two factors are major influences in the upsurge of civic center construction. One is the rapid increase in population and the resulting need to expand municipal personnel and services. The other is the growing importance of urban redevelopment, encouraged by federal aid.

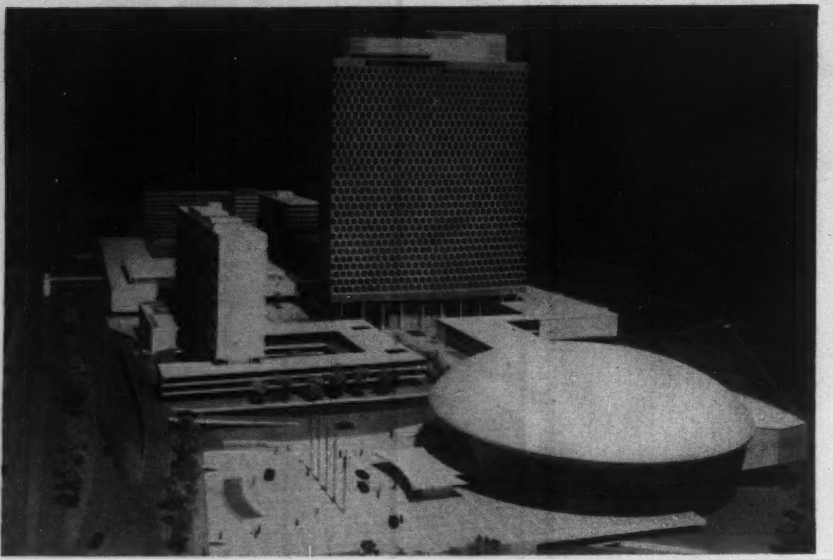
Municipal growth has put city officials under tremendous pressure to replace inadequate and obsolete city buildings with larger, more modern structures. In addition, citizens are demanding facilities like municipal auditoriums and exhibition halls.

Urban redevelopment makes consideration of the civic center idea imperative. Nearly every city has a suitable location for a civic center in some rundown area close to the city's heart. Now federal grants and loans are available to help purchase the land and plan the redevelopment. It's an unprecedented opportunity, and many cities are hastening to take advantage of it.

• **What is a civic center?**—Civic centers are clusters of municipal buildings erected in accordance with an overall plan for development of an area. When a city is built from scratch—like Washington, D. C., or Oak Ridge, Tenn.—it is natural to concentrate municipal buildings in one area for convenience.

But when cities grow haphazardly—and most cities do—municipal officials are forced to rent space for needed additional facilities or spot new buildings wherever sites are available at reasonable cost. So until recently most cities have been able to do little more than cast vague plans of civic centers for the distant future.

In Los Angeles, for example, plans for a civic center started in 1907, but it was not until 1952 that a plan finally was put into effect. In its civic center, Los Angeles now has a $10-million city hall, a $6.9-million federal building and a state building. Last year, a $3.3-million, 10-story



BOSTON'S BACK BAY business center awaits a decision on tax exemption.

health administration building was added. Now under construction are a $6.5-million police facilities building and the $400,000 Fort Moore Memorial, a 400-ft-long by 50-ft-high waterfall which will beautify the center and also act as a retaining wall. Early this year, construction will start on a $14.5-million county courthouse, and next year a $19.5-million county administration building will be added.

**• Detroit's civic center**—Construction is under way or completed on three of the four buildings planned for Detroit's $88-million civic center. A veterans memorial building was completed in 1950 at a cost of $5 million. It contains banquet hall, ballrooms and meeting rooms.

A $26-million, 20-story city-county building will be finished next summer, providing office space, courtrooms and a meeting chamber for the City Council. The $4.7-million Henry and Edsel Ford Auditorium is now under construction, and demolition work is in full swing to make way for a $24-million convention hall and exhibition building that will cover the better part of six city blocks.

Brooklyn, N. Y., is pushing work on an $80-million civic center which stands on a 56-acre site at the entrance to Brooklyn Bridge. In 1951, a $10.6-million transportation building and a $500,000 World War II Memorial were completed. In 1954, a $4-million, six-story domestic relations court was finished.

Now under construction are a $10-million civil prison and remand shelter, a $2.3-million welfare building and a $750,000 chapter home that the Red Cross is constructing with its own funds. Demolition is under way to make room for a 10-story supreme court building, and the federal government has purchased an adjoining site for a district court building.

Milwaukee started to develop a civic center in 1908 and recently has added a courthouse, a building to house the police and sheriff's departments and buildings for the University of Wisconsin. A $3.5-million addition to the main library is now being talked about. A new museum and a $6-million state office building are definitely planned.

New Orleans plans to start construction this year on the first building in its civic center. Bids have been asked for the $8.3-million, nine-story structure which will serve as a city hall. Planned for early construction are one or two state office and court buildings at $5 million and a $3-million library.

Albuquerque, N. M., is planning a civic center but has not yet selected the site. First unit probably will be a $1-million auditorium. Later, the overcrowded city hall will be relocated in the center.

San Francisco is looking for an architect to design an underground convention hall for its civic center. The city's civic center already includes a city hall, a war memorial, a veterans' memorial building, an auditorium, a library and a federal building.

Norfolk, Va., has engaged architects Rudolph, Cooke and Van Leuwen of Norfolk and Vincent G. Kling of Philadelphia to plan its civic center. Three or four buildings are under consideration. They would house a jail, offices, courts and police headquarters.

Rochester, N. Y., hopes to start construction of its civic center next year. Architects Faragher & Macomber of Rochester and Voorhees, Walker, Foley & Smith of New York have been engaged to plan it.

Omaha, Neb., also is considering a civic center to be constructed on the four-block site of the city's central high school.

**• In state capitals**—There has been a lot of recent public building construction in state capitals. In Harrisburg, Pa., construction is under way on a $9-million office building for the Department of Labor and Industry and a $6-million commonwealth office building. Bids may be taken later this year for a $3-million office building for the Bureau of Motor Vehicles and the Bureau of Highway Safety.

Columbus, Ohio, is adding a $3.5-million veterans memorial to its civic center which now includes a city hall, city safety building, federal building and 14-story state office building. The state also is planning a new office building—which may be incorporated in the center—and a religious building to be called the Temple of Good Will.

Sacramento, Calif., is building a two-block-long employment building at a cost of $7.5 million and a $2-million, five-story personnel board building. The state recently completed a $5-million education building along Capital Mall.

**• Private center lag**—Although civic center construction is booming, private interests planning clusters of commercial buildings within cities have found the going tough.

The huge investment required, high city taxes and the difficulty of accumulating parcels of real estate to combine into adequate sites at reasonable costs probably are the principal deterrents to the construction of private centers.

Rockefeller Center in New York City, largest center of this type, has added only two office buildings since the end of World War II. Gateway Center in Pittsburgh has not grown since its first three buildings were built in 1952.

Boston's Back Bay business center, including a municipal auditorium and exhibition hall, office buildings, hotel and shopping center to cost $75 million, is stymied by the city's high tax rate and may not go ahead unless some tax relief is granted (see p. 28).

Elsewhere, however, some progress is being made. In Denver's Mile High Center, a 23-story office building has been completed, and construction is now under way on a $1-million transportation building and on a bank. Construction will start soon on a garage. Total cost of the project is $20 million.

In Dallas, construction will start soon on Southland Center which will consist of four buildings, the biggest a 40-story structure.

# Honolulu Tunnel

### Contractor says he can finish job where three cave-ins killed five men

Expert opinion to the contrary, E. E. Black, contractor on Honolulu's ill-starred Wilson Tunnel, claims he can finish the job by an open-cut method "at far less cost than it could be done by a new organization."

Driving on the 2,773-ft bore ceased last Aug. 14 when the last of three soft-ground cave-ins killed five workers (ENR Aug. 26, 1954, P. 25).

Termination of the Black contract was the first step recommended by Carl Terzaghi, Harvard University soils expert, who was engaged to advise the city-county government of Hawaii's capital. The Terzaghi report was made public Jan. 21, at the same time a publication of two earlier reports by Francis Donaldson, New York tunnel contractor, and Ralph Peck, University of Illinois soils expert.

All three agreed that the cave-ins resulted from the contractor's continuation of full-face mining (a proper method for the rock that had prevailed in the first 1,800 ft) in soft ground. Major blame for this can be placed on the contractor's lack of experience in soft-ground tunneling, according to the Donaldson report which further stated, "... the contractor's procedure verged on recklessness."

Saving the job, now that so much ground has been loosened above the bore, will call for much more skill than would have been required to prevent the cave-ins, according to Terzaghi. He recommended negotiation of a cost-plus-fixed-fee contract with a mainland contractor known to be capable of handling the most exacting and hazardous soft-ground tunneling situations.

Terzaghi warned: "One more step in the wrong direction may mean the loss of the entire capital which has already been invested in the tunnel and of the additional capital which will be spent during the attempts to reconstruct the cave-in portion on a cost-plus basis."

Terzaghi further recommended hiring Leo Casagrande, Harvard electro-osmosis expert, to work with the new contractor in applying his method to the stabilization of the saturated fine-grain material that has caved into the bore.

If the ground can be stabilized, driving can proceed by a conventional multiple-bench procedure. Otherwise use of a roof-shield would be imperative, according to Terzaghi. Cost is likely to be $2 million more than the original estimate of $4 million.

In his answer to critics Black put his own plan out for consideration and criticized city officials handling the job.

He noted that Donaldson, proposed completion by a drift method. He estimated that a drift 840 ft long might cost $1,750,000 additional.

For $1,750,000 Black told city officials, his firm could construct about 400 ft of open cut and 440 ft of cut and cover for both the tunnel now under construction and a parallel tunnel which the city is planning to build later.

"Thus, in effect," Black said, "the people of this city could have the most difficult sections of both projects completed for the same expenditure which your own expert finds would be necessary to complete this project as one tunnel."

First reaction of city officials was to stand by their previous position—that of adopting Terzaghi's recommendation that they get a new contractor.

Contractor Black's firm, E. E. Black, Ltd., Honolulu, holds the Wilson Tunnel (named after Honolulu's former civil engineer-mayor) contract jointly with two Salt Lake City tunneling firms, Boyle Brothers and Gibbons and Reed. Since the cave-in, tunnel work has consisted primarily of lining the 1,800-ft bore through rock.

## College Instructors Offered Grants for Highway Study

The Institute of Transportation and Traffic Engineering of the University of California has announced a program of grants-in-aid to assist college engineering instructors undertake advanced highway engineering courses.

The institute said a total of 20 grants-in-aid of $650 each will be available for its eight-week summer program of study in advanced highway transportation engineering. The course begins June 20 at the University of California in Berkeley.

The grants-in-aid will be awarded to instructors who now teach or expect to teach highway engineering as part of their regular duties in engineering colleges of the United States.

The institute also announced that two Automotive Safety Foundation fellowships will be available for graduate study in the field of highway transportation engineering. Applicants must be engineering graduates and qualify for admission to graduate standing in the University of California. Each fellowship consists of $2,000 for study during the academic year beginning next fall.

# Hospitals Needed

### President asks measures to stimulate construction of more health facilities

President Eisenhower sent a special message to Congress this week asking for new measures to stimulate the construction of hospitals and other health facilities.

The major recommendation in the message was a new one. The President asked authority for the Department of Health, Education and Welfare to insure construction mortgages for health facilities like the FHA insures mortgages on homes.

The President's message said that many sponsors and operators of new health facilities have found they are unable to qualify for grants under the Hospital Survey and Construction Act.

That law, amended last year, approved a $180-million, three-year program of supplying 50-50 matching funds for new construction. Included was a $21-million appropriation to start construction of facilities to take care of the chronically ill and aged.

"In other fields," the Presidential message said, "government-insured loans have consistently helped produce the new construction required in urgent national interests. The tested procedures developed by such programs as these should now be used to stimulate construction of additional health facilities."

Under the President's proposed program, the government would insure—at low premiums—mortgage loans made by private lending institutions for new hospital and health facility construction.

To make sure that private money would be advanced, the authorization would limit the insurance to "less than the face amount of the loan" and the mortgage would have to be for "less than the full value of the property."

The message also recommends new assistance, in the form of grants-in-aid, for services to mothers, crippled children, children requiring special health services and for the mentally ill.

The President specifically recommended authorization of a grant program for mental health projects.

Other recommendations:

- Creation of a unified structure for all the federal health grants now going out to the states. The President said this would give greater flexibility in the use of federal grant funds for state public health services.
- Expansion of federal aid in research on air pollution.
- Extension and strengthening of the Water Pollution Control Act.

# Three Conventions in Midwest

## Meetings in Chicago, Cleveland attract manufacturers, distributors, suppliers of equipment, materials

**S. C. Jensen**
**Assistant Editor**

With the speed of a triple play—but little of its smooth efficiency—construction men last week hustled through three industry conferences.

In Chicago's Conrad Hilton Hotel, members of the Associated Equipment Distributors took a look at sales prospects for 1955.

A short taxi ride away at the Plant Maintenance and Engineering Show, many of the same people were told that the trend is toward elimination of shelter-type plant buildings because of high maintenance costs.

One air-hour away in Cleveland, the National Concrete Masonry Assn. and the Concrete Industries Exposition was unwinding. Here, hurricane-resistant construction was analyzed, and $1 billion in Army construction contracts for the next fiscal year was predicted.

• **Associated Equipment Distributors**—At the AED, approximately 3,000 souls braved the snow-laden winds from Lake Michigan to talk about a business that apparently is only slightly less unsettled than was the weather. According to John MacLeod, president of the Associated General Contractors of America, Inc., distributors, manufacturers and contractors must all work more closely together as the tempo and volume of construction increase.

As to volume increase, MacLeod pointed out that $52 billion was spent for construction last year with $37 billion going for new construction and the remainder for maintenance and repairs. He predicted a rise this year to $56 billion—$40 billion for new construction. And he said he looked for $60 to $75 billion worth of construction within a few years.

"Competition among general contractors," MacLeod said, "is terriffic. This means that in order to get the job we must bid very carefully. And to keep from losing money, we must explore every opportunity for more efficiency and economy.

"When we get a job, it will be very important to us that we know which pieces of equipment will do each part of the job most economically." He said manufacturers should develop even better and more efficient equipment than current production models.

MacLeod had a warning for distributors. This year as last, he said, will see a buyer's market. The selling job will be harder than in the past. What the contractor wants is greater service—reliable information on the best equipment for a job, instructions for the contractor's operators on how to maintain and operate a new or improved piece of equipment safely and efficiently, and organization to make repair parts available when needed.

Special emphasis was placed on this last point by the AGC spokesman.

"The contractor must be able to get repair parts promptly," he said. "He cannot afford to have idle equipment, particularly on a highly mechanized job where one unit in a key spot may, with its failure, tie up a whole production line."

In conclusion, MacLeod said manufacturers and distributors should not extend excessively easy credit to contractors who have just entered the business and who have not demonstrated their skill, integrity or responsibility. Such procedures give undue encouragement to bringing potentially irresponsible contractors into the industry.

"I can understand," said the AGC president, "the natural desire to increase sales, but I do not believe that the distributors, the construction industry or the general public are benefited by consistent departure from sound business principles."

A similar picture of hard work and increasing responsibilities for the equipment distributor who would be successful this year and in the future, was spelled out in detail by George Gagel, AED's outgoing president.

"Such practices as excessive free service to the customer and for the factory, slip-shod management of sales forces and territories, total disregard of sound economic planning in the matter of trade-ins and the utter lack of sound thinking on financing long-term selling—all must be re-appraised," Gagel declared.

• **A highway resolution**—The sole resolution passed at this, the 36th annual meeting of AED, pledged the manufacturers and dealers in construction equipment to the full support of the $100-billion Eisenhower highway program. The resolution commends the "forthright and realistic approach toward this critical problem." It will be forwarded to the President.

On Wednesday morning, Ray J. Finn, president of the Bode-Finn Co., Cincinnati, Ohio, was elected to the presidency of the AED. For Finn, this climaxes a rise through a number of executive positions in AED, including that of executive vice president last year. He is affiliated with the Engineering Society of Cincinnati, American Public Works Assn. and the Cincinnati Sales Executives' Council.

**RAY J. FINN is AED's new president.**

Others elected at the meeting include: S. F. Laskey of the Northwestern Equipment Co., Fargo, N. D., executive vice president; L. M. Doolen of the Telford Equipment Co., Lansing, Mich., vice president; H. D. Anderson of the Rish Equipment Co., Bluefield, W. Va., vice president; M. F. MacDonald of F. H. Hopkins & Co., Ltd., Montreal, Quebec, Canada, vice president; and F. J. Fitzpatrick of the Parker-Danner Co., Hyde Park, Mass., treasurer.

• **Plant Maintenance and Engineering Show**—At Chicago's Palmer House on Monday night, W. E. Chandler of the Monsanto Chemical Co. took a couple of verbal swings at current plant construction practices. He said the cost of maintaining conventional plant buildings is so high that smart designers are doing everything they possible can to eliminate enclosures entirely. Chandler sited the pioneering of the petroleum industry in this direction and the similar moves being made by the chemical companies.

Chandler looks to plastics to effect valuable savings in future plant maintenance. "Although brick and similar materials may provide long life, they are particularly inflexible insofar as alteration and replacements are concerned. There has been a definite trend for some time toward the use of such materials as corrugated asbestos and protected metal. With the development of plastics, an entirely new field is being opened up and the future trend will probably be toward the application of some form of plastic materials for industrial plant building walls."

Fire-resistant roof construction, explosion-vent glazing and heating and ventilating systems were mentioned as good prospects for plastic applications where reductions in maintenance costs and problems are important.

With regard to painting, Chandler stated, "The technical development in the field of paint manufacture in the last few years makes it important for the management of any plant to insure that sufficient technical talent is assigned to the painting problem to assure optimum results. The success of a painting program is very much dependent upon the initial design of the building. Insofar as is economical, the design should be such as to eliminate all painting wherever practical. Under some conditions it may be economical to line the inside of buildings with glazed tile or similar materials which can be maintained without painting. Structural steel platforms and roof trusses should be designed with a minimum use of angles and other shapes which produce corners and crevices which are extremely costly to protect."

**• NCMA and Concrete Industries Exposition**—Some of the major manufacturers last week had a number of their distributors spend half their time at the AED in Chicago and another two days in Cleveland talking to the 5,000 visitors at the Concrete Industries Exposition.

A paper on hurricane-resistant construction was given by E. R. Mangotich, assistant engineer, National Concrete Masonry Assn. In it he stressed the importance of adequate connections or ties between the building elements, particularly those between the roof and the walls. According to Mangotich, failures of concrete masonry construction during hurricanes are caused more frequently by inadequacy in this quarter than by failure of any of the individual elements under load.

Harry B. Zackrison, chief of the Engineering Division for Military Construction, Office of the Chief of Engineers, Washington, reported that construction contracts for the Army's continental defense program are expected to go over $1 billion this fiscal year.

According to Zackrison, the use of concrete masonry in military construction will be greatly expanded under this program.

# Emergency School Aid Pushed

## Democrats try to get jump on Administration by drafting school building program before President sends message

Federal aid to school construction became a political football on Capitol Hill this week as Senate Democrats rushed to complete hearings on emergency legislation before the President sends his school message to Congress.

Sparkplug behind the Democratic drive is Sen. Lister Hill of Alabama, chairman of the Senate Labor Committee. He has come up with a double-barreled approach to the problem that may become the Democratic party's position. His proposals include:

- An emergency bill that would provide $500 million a year in federal aid for two years, on a matching basis.
- An "oil-for-education" bill that would tap royalties from production of federally controlled tidelands oil to meet the classroom shortage over the long haul.

Some Republicans on the Senate Labor Committee, like Sen. H. Alexander Smith of New Jersey, feel that Hill should wait until the Administration message has been submitted. Samuel Brownell, chief of the Office of Education, appeared before the committee on Monday but only to give an analysis of pending legislation. He did say, however, that the President's program may be sent to Congress before the scheduled Feb. 15 date.

Sen. Smith and the other Republicans on the committee are generally favorable to an emergency bill, such as introduced by Hill, but feel they can't take a position until the White House is heard from. The Republicans are further embarrassed by the fact that the President failed to include federal school aid in his budget requests. They say this plays into the hands of Democratic members, who accuse the Administration of dragging its feet in the hope of avoiding any federal outlays this fiscal year.

**• Hearings are rushed**—However, the Senate Republicans have little chance of stopping the Hill bill in committee, if Hill chooses to ram it through. Indications this week were that he would follow three days of open hearings with executive sessions designed to get the emergency bill on the Senate floor before the Presidential message. Senate Democratic leaders appear to be a party to this strategy.

Sen. Earle Clements of Kentucky, Democratic whip and Acting Majority Leader in the absence of Sen. Lyndon Johnson, was one of the first witnesses to testify before the committee. He paraded a stream of Kentucky school officials to document the need for emergency action. Clements also got permission for the committee to hold hearings during afternoon sessions of the Senate, even though it was debating the Formosan defense desolution.

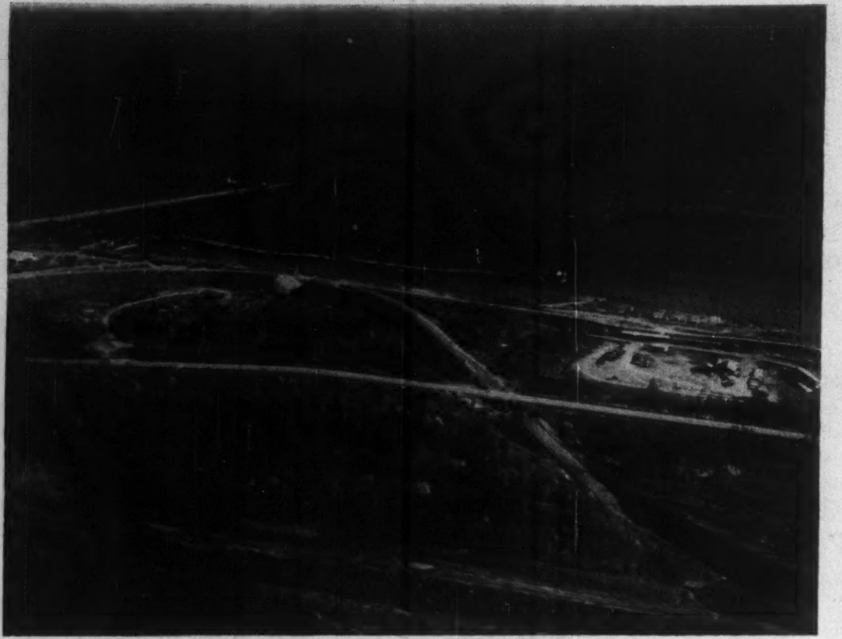
The Republicans are hoping to slow down action on the bill when they get into executive session this week. One issue that may aid their efforts to delay action is the thorny one of distribution of federal funds to the states. Most southern members favor a formula that would put allocations on the basis of need. This would work in favor of the southern states which generally have lagged behind the national average in school construction. Many northern congressmen prefer to put it on a basis of federal taxes paid or on a population basis.

Proponents of federal aid say they feel certain they will be able to get around the thorny segregation and parochial issues that in the past have plagued efforts to write legislation. They would do this by letting the chief school officer in each state administer the program.

**• House moves slower**—In the House, action won't be so fast. Rep. Carl Perkins of Kentucky says he will push as first order of business by the House Labor Committee the consideration of the aid bill. But chairman Graham Barden of North Carolina says he is in no race with Sen. Hill to get a bill out.

The House committee is likely to take up first a bill by Rep. Carroll Kearns, Republican of Pennsylvania and a former school teacher, who last session headed a subcommittee that studied the long-range needs in education. Kearns favors an open-end type bill that sets no termination date nor dollar amount on federal aid. He would match whatever the states are willing to put up over a six- to ten-year stretch on a matching dollar-for-dollar basis.

The final House bill is likely to be a committee compromise, but it is more apt to resemble the Kearns approach than the Hill bill. While the Senate tends to lean towards a formula that would favor southern states, the more representative House will be more likely to go for a bill based on a formula more favorable to large population centers in the North and East.



# Building a New Lake Harbor

Taconite harbor is being blasted out of the hard rock shore of Lake Superior 75 mi north of Duluth. It is part of a $300-million project of Erie Mining Co. which will start feeding taconite ore to the nation's steel industry by 1957 (ENR Dec. 11, 1952, p. 40).

Construction of the 30-ft-deep harbor and its 2,444-ft-long concrete wharf requires the removal of approximately 1,000,000 cu yd of rock over a 35-acre area, much of it under water.

The work is being carried out by the Contracting Division of Dravo Corp., Pittsburgh. Dravo is building two cellular steel sheet pile cofferdams around the excavation areas to facilitate blasting and rock removal.

The first cofferdam, composed of 59 cells, was divided into two parts so excavation could be carried on in one area while the second part of the cofferdam was being constructed. After the first portion of the main cofferdam was completed, water was pumped out and blasting began.

The harbor is approximately 4,900 ft long and 1,500 ft wide. Two small islands joined by a rock breakwater will form the outer protection, and other rock breakwaters extending outward from the shoreline will safeguard the sides. Ships will enter one end of the harbor between the breakwaters and leave through the other end.

The harbor will be excavated to leave a vertical wall of rock which will be faced with concrete to form a solid dock. The ore-loading wharf is 1,200 ft long. On it will be mounted 25 concrete bins for loading taconite. Thirteen additional bins can be built on a 624-ft extension of the dock later on.

Dravo began work on the harbor last May and expects to complete the job sometime next year. The harbor probably will go into operation late in 1957 when Erie Mining Co.'s processing plant for taconite, 73 mi inland, is completed.

A new railroad will deliver taconite ore pellets, processed at the plant, to the harbor for loading into lake carriers. Ore cars will travel on a railroad trestle above the bins to discharge their contents. Lake freighters will be loaded directly from the bins by means of conveyors.

Erie Mining Co. is owned by Bethlehem Steel Corp., Youngstown Sheet and Tube Co., Interlake Iron Corp., and Steel Company of Canada, Ltd.

## Utah Engineering Council Backs Registration Law

A new registration law for engineers and land surveyors in Utah is now before the state legislature. It is based on the model registration law for engineers and is to replace a law passed 20 years ago that does not cover all types of engineering work.

Standards for registration set in the old law are so low that 30 states will not issue reciprocal licenses to engineers registered in Utah.

The new law is sponsored by the Utah Engineering Council. It has the support of all the engineering organizations of the state and has been endorsed by the Utah Legislative Conference.

# Utilities and Roads

## Highway building program raises protests over utility relocation costs

Public utility companies are set to make their loudest protest yet over the costs they are subject to bear for relocation of telephone, power, water and fuel lines in connection with highway construction.

They will press their case for revision of existing cost allocations during the forthcoming congressional hearings on the President's big highway program.

Last week Congress received the results of a study made by the Bureau of Public Roads—with the cooperation of utility companies—showing what relocation costs were in 1953 as compared with overall highway construction costs.

The study showed that the $509-million federal-aid highway program of 1953 required relocation work costing about $21 million. Most of this total was for relocation on the primary highway system since it is on this network that utilities most often move their facilities.

The figures for 1953 fix the cost of utilities relocation at 4.1% of the total federal funds for highway construction. The new highway program calls for an annual federal outlay of $2.5 billion—five times the 1953 total.

It is not at all certain that utility relocation costs would mount in the same proportion, but utility spokesmen do point out that a big chunk of this increased federal highway money would be spent in urban areas where relocation is most common and most costly.

Under the present law, the federal government pays the entire construction cost of only those highways on federal property. And only when the federal government pays the entire construction cost does it completely reimburse utilities for relocation expenses.

On federal-aid roads the federal government contributes for relocation costs on a matching basis with the states only where state law requires state payments.

The utilities will insist that relocation costs should be charged to the highway project and will urge the federal government to set this policy. They will argue that it would be unfair to make the utility companies and those who use their services pay for relocations required by highway construction when they receive no improvement or benefit in utility services from the work.

## Air Force Building

### Strategic Air Command announces plans to build headquarters at Omaha

The Air Force's Strategic Air Command has announced plans to build a new headquarters building, which will include an underground structure three levels deep, at Offutt Air Force Base, near Omaha, Neb.

The building will be the control center for SAC's globe-girdling activities. Its estimated cost was not announced, but it was understood that the project will be an $8-million job.

The Army Engineer Omaha District Office, which will have charge of the project, said that bids will be invited February 18 and opened April 14. The building is scheduled for completion by August 31, 1956.

This is the second time the SAC headquarters building has been approved for construction. Bids for the project had been submitted three years ago when an Air Force economy decision forced postponement of construction.

A SAC spokesman said the structure will "utilize the latest in functional design to provide for efficient administration and operational control." The building will be three stories high with four wings jutting out from the central section. It will be of concrete and masonry construction.

The central section will be 597x68 ft. Three of the wings will be 69x176 ft. The other wing will be 88x133 ft. A theatre 42x98 ft will be connected with the central building by a corridor 57 ft long.

The three-level concrete underground structure will be 145x264 ft. It will have exterior access ramps.

Leo A. Daly Company of Omaha is architect-engineer for the job.

### Firm Wins Safety Award Second Consecutive Year

For the second year in a row, Garrison Spillway Constructors, Inc., has won the plaque presented by Associated General Contractors of America to the U. S. company with the best safety record in heavy construction.

During the year ended last October, Garrison Spillway Constructors had only two minor injuries in a total of 733,671 man-hours of work. The year before, the firm worked over 500,000 man-hours with only three minor injuries.

The company holds the Stage 1 spillway contract for Garrison Dam in North Dakota. It is a combine composed of Johnson, Drake & Piper, Inc., Minneapolis; Foley Bros., Inc., St. Paul; C. F. Lytle Co., Sioux City; Donovan Construction Co., St. Paul; and Winston Bros. Co., Minneapolis.

C. C. Rusconi, Corps of Engineers safety engineer, said the company's safety record this year was even more remarkable than that of the previous year because the work performed was more hazardous.

The award will be presented at a special ceremony to be held in New Orleans, La.

## Jobs in the News

**POWER PLANT**—The Niagara Mohawk Power Corp., Syracuse, N. Y., will construct a 200,000-kw unit at its steam-electric station in Buffalo. Estimated cost is $30 million. Construction will be started immediately and is scheduled for completion in 1957. The plant will be the largest steam-electric generating unit ever erected in New York state.

**PETROLEUM FACILITIES**—Gulf Oil Corp. has awarded two contracts for additions to its facilities at Port Arthur, Tex. M. W. Kellogg Co., Houston, will construct a $13.6-million catalytic cracking plant and treating unit. An $11.5-million crude topping and vacuum plant will be constructed by Arthur G. Kellogg, Cleveland, Ohio.

**HOUSING DEVELOPMENT**—P. & M. Construction Co., Columbus, Ohio, has received a contract from G. E. Bass & Co., Jackson, Mich., for construction of a housing development at Columbus, Ohio. Estimated cost is $15 million. The project, scheduled to start immediately, will be completed in 1957. H. G. Dill, Columbus, is architect.

**ST. LAWRENCE**—Pentagon Construction Ltd., and Iroquois Construction Co., Ltd., Montreal, Que., have been awarded a contract by the St. Lawrence Seaway Authority, Ottawa, for construction of a canal and lock at Iroquois, Ont. Estimated cost is $6.4 million.

**FACTORY**—J. A. Utley Co., Ferndale, Mich., has received a contract for construction of a body paint shop for Chrysler Corp. in Detroit. Estimated cost is $4 million. Albert Kahn Associates, Detroit, are consulting engineers.

**AIRFIELD IMPROVEMENTS**—Morrison-Knudsen Co., Inc., Boise, Idaho, has been awarded a contract for airfield paving and lighting at Fairchild Air Force Base, Spokane, Wash. Estimated cost is $4.8 million.

## Mississippi Bridge

### Dravo Bids $3.1 million under estimate on piers for New Orleans bridge

Dravo Corp. of Pittsburgh was low bidder for construction of the four main piers of the new Mississippi River bridge at New Orleans with a bid of $6.7 million—more than $3 million under engineering estimates.

The Mississippi River Bridge Authority last week announced acceptance of the Dravo bid. B. E. Rhoads, Dravo vice president, said construction will start about March 1.

Under the specifications, construction of the four piers—only one will be in the river—must be completed not later than 670 calendar days from the day the contract is awarded.

The four piers will include one in the front of the west bank levee and one behind it. A third will be on the east bank. The fourth will be located out in the river, 555 ft from the east bank.

Dravo was one of five bidders for the job which had been estimated by the consulting engineer firm of Modjeski and Masters to cost $9.8 million. Other bidders were:

- J. Rich Steers, Inc., New York; Morrison, Knudson Co., Inc., Los Angeles; and R. P. Farnsworth and Co., Inc., New Orleans—$6.9 million.
- Merritt-Chapman and Scott, New York; and Kansas City Bridge Co., Kansas City—$7.2 million.
- Massman Construction Co., Omaha; Guy P. Jones Construction Co., Oklahoma City; and Condon-Cunningham Co., Omaha—$7.5 million.
- Farnsworth and Chambers Co., Inc., Houston—$12.3 million.

### Exploration Work to Begin For San Francisco Bridge

The California State Department of Public Works has authorized bid advertisements for preliminary foundation exploration in San Francisco Bay along the route of the proposed Southern Crossing.

The explorations will be carried out from Third and Army Streets in San Francisco to Bay Farm Island in Alameda. Additional borings will be made at China Basin in San Francisco, along the south shore of Alameda and in Airport Channel in Oakland.

The work will consist of making 32 sediment test boring holes and obtaining 430 undisturbed samples at specified locations to determine depths of footing, length of piles and amount of sediment expected for the proposed bridge.

# Boston Again on Horns of Tax Dilemma

## Proposed tax relief to gain $75-million business center stirs controversy that strikes at heart of city's plight

Proposals for tax concessions calculated to win financial support for Boston's projected $75-million Back Bay business center have rekindled a controversy, the outcome of which may do much to determine the city's economic future.

For few cities have been caught in a more vicious cycle of declining tax base, rising tax rate and acceleration of business and residential migration.

Once again, downtown retailers and office building owners are ready to fight hard against proposed tax relief for the business center project. At last year's session of the state legislature, their opposition to a bill authorizing tax concessions resulted in the problem going to an interim study commission. Now that commission, composed of legislators and businessmen, has reported to the legislature in favor of relief under certain conditions.

- **Would cover rail yards**—Back in late 1953, real-estate operator Roger Stevens proposed a big commercial development over the 28-acre passenger-train yards of the Boston & Albany Railroad. The project would include: a $5-million convention and exhibition hall to be owned by the city; a shopping center; a hotel; several office buildings, and underground parking space for 5,000 cars.

Financing has been stymied because institutional investors do not believe the project would pay off if subjected to the full impact of Boston's tax rate, one of the highest in the U. S. for metropolitan areas.

The legislative study group believes that if the project went ahead it would add at least $50 million to Boston's shrinking tax base. It eventually might permit a $2 or $3 reduction in the rate, now $69.70 per $1,000. Its report also takes account of higher spending by convention visitors, possible employment of 12.000 people in the center, and the millions of man-hours of labor required to build it. Another point is that development of the railroad area would prevent deterioration, as has already occurred in some adjacent properties.

- **Concessions and conditions**—Here are the proposed tax concessions:

(1) During the construction period, estimated at five years, the assessed value of the property would be arbitrarily fixed at $5,670,000, which is considerably more than the 1954 assessed valuation.

(2) After completion, the city's right to take over the property for tax default would be limited to a basic amount of three times the tax on three times the 1954 assessment. The rest of each year's taxes would be paid out of net income after maintenance and debt service, and ahead of dividends on stock, until one-half of the year's tax had been paid. Thereafter, two-thirds of net income must be allocated to taxes.

The commission believes this would encourage lenders to lend on mortgage security, with reasonable assurance that debt service would be met. It also figures that in any normal year the property taxes would be paid in full. Any unpaid taxes not paid when due would bear interest at 4%.

In return for these tax concessions, the commission proposes that Stevens hand over to the city of Boston his options to buy the tract, and that the city set up a three-man Back Bay Development Commission. The commission would award a construction contract by competitive bidding. The successful bidder would undertake to work subject to the approval of the commission. He would be required to form a separate corporation for the job, whose books would be subject to public audit.

- **City's tax plight**—The reason why some Boston interests are willing to see tax concessions is that the city urgently needs new taxable property. Boston's tax base has declined from $1.9 billion in 1930 to about $1.5 billion today. This is because of migration of business enterprises to the suburbs, and the lack of any substantial investment in new buildings during the past 20 years. Finally, tax-exempt property owners, such as educational, religious, and charitable institutions, are particularly important in Boston, and more property is going off the tax rolls all the time. The total thus held is about a third of the city's total assessed valuation. Also, new expressways and other public improvements have taken additional property off the tax rolls.

There is no general agreement on what should be done. Boston's mayor wants to lower the property-tax rate by creating new sources of revenue, such as sales tax. But this is bitterly opposed by retailers, organized labor, and political leaders. On the other hand, organized labor has begun to speak up for the Back Bay project.

HOW TO HANDLE
WET JOBS

WATERWORKS
SIPHON
Kent, Ohio
*Contractor: Engstrom & Wynn*

PART-TIME PUMPING DRIES
JOB QUICKLY, CUTS COST

**How IMPORTANT is the engineering factor in wellpoint work? This job is a good case in point.**

- **Soil was coarse sand, overlying an undulating clay base, top of clay being close to subgrade. Confronted with these conditions, contractor quite naturally figured pre-drainage on a basis of continuous pumping 24-hours-per-day.**
- **Griffin engineers, however, devised a unique layout, using special-screen points and special placement. With this layout, plus careful supervision, the job was speedily dried with only 9 hrs pumping per day (thus bringing operating and fuel costs far below estimate). Yet results were so thorough that drainage influence extended to dewater all footing excavations in the surrounding area.**

**GRIFFIN
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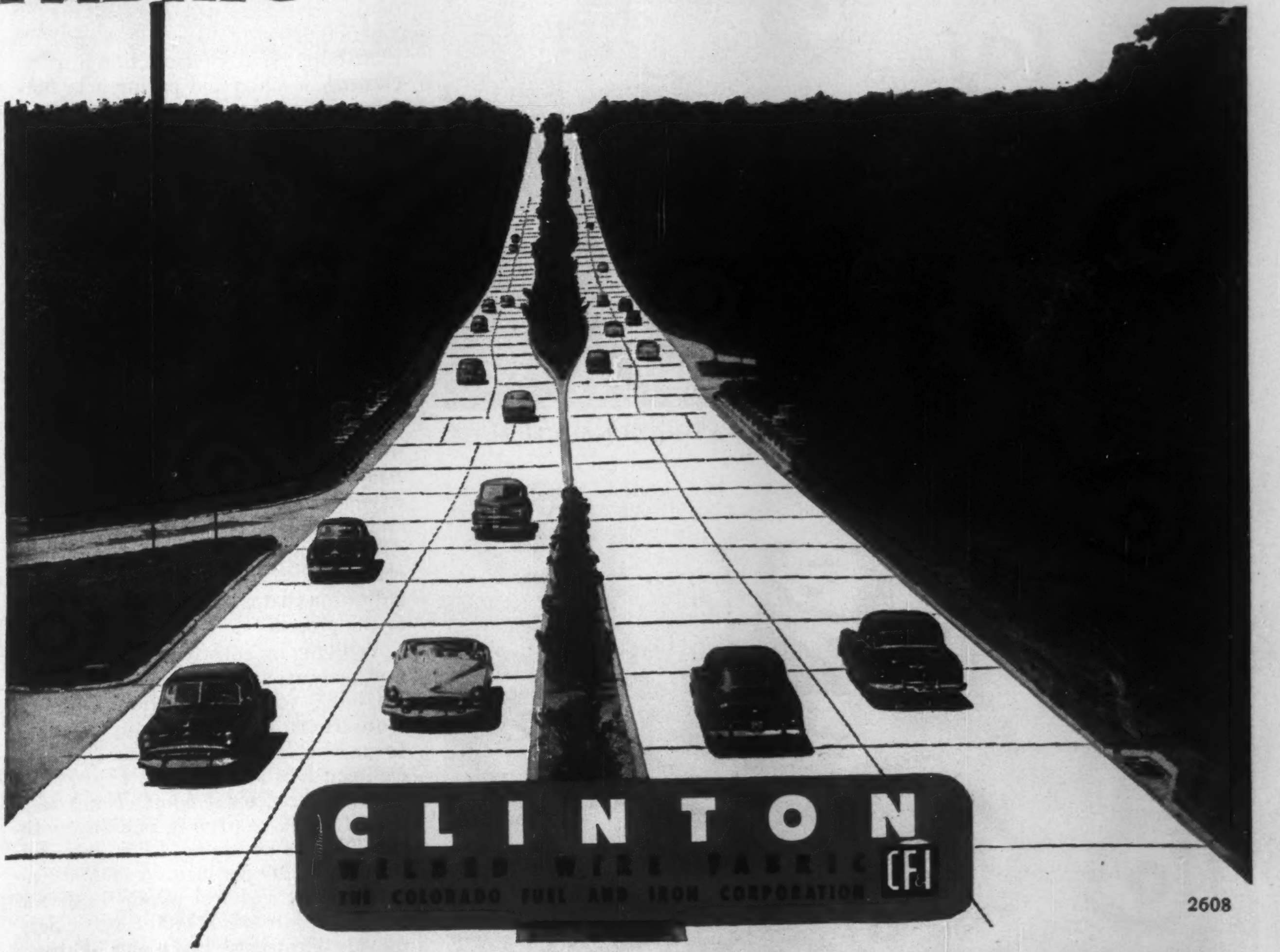
Clinton Welded Wire Fabric is available in a wide variety of gauges and spacings for all reinforcing requirements. It meets all A.S.T.M. and A.A.S.H.O specifications.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# $80,000,000 construction for Plattsburg jet bomber base

## Rugged yellow machines and engines help speed 3,882,500 cu. yds. of excavation for 10,000-ft. runway and other projects

Matched Caterpillar equipment saves seconds every cut — a D8 push-loads a high-speed, big-capacity DW21 in sandy clay.

Operator's clear view of blade and job in the No. 12 helps speed shaping and leveling fill, also building road.

Keeping on schedule is the order of the day, every working day, on the $80,000,000 Air Force Base project, Plattsburg, N. Y. Construction involves clearing, leveling and paving a 10,000-ft. runway, taxiways and parking apron, relocating two miles of single-track railroad as well as building hangars, barracks, offices, jet fueling plant and water and sewage facilities. When the base is activated in the fall of 1955, a Strategic Air Command jet bomber wing of forty-five B-47s and twenty KC-97 tankers will be stationed here.

The historic site of Plattsburg Barracks, one of the oldest military installations in the United States, is the scene of hustling activity under the supervision of the Corps of Engineers. To maintain schedule (operating two 8-hour shifts per day), contractors are relying heavily on rugged yellow track and wheel-type tractors, scrapers, bulldozers, motor graders, engines and other specialized earthmovers — standardization that is paying off in all phases of the project.

Working on construction of the runway, taxiways and apron, which involves 3,410,000 yds. of excavation, Dutcher Construction Corporation, Queenstown, Md., has a fleet of fifteen DW21s, eighteen D8s and five No. 12s. Fill is 27 ft. at the deepest point. Hauls vary from 1800 ft. to 6100 ft. one way, with the DW21s averaging 18 cu. yds. of very sandy clay per load. A D4600 Engine powers a shovel piling brush for burning, while two D3400 Electric Sets provide electricity for night lighting.

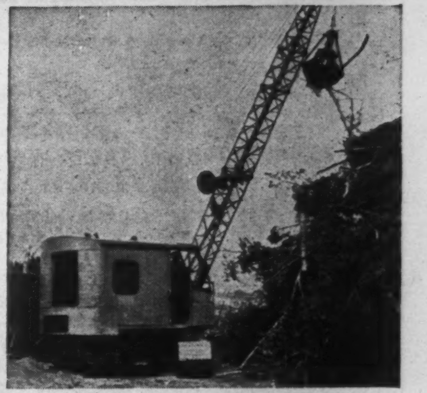
On another phase of the project, laying 63,000 ft. of 38-in. drain pipe, Winkelman-Tompkins-Jones, Plattsburg, prime contractor, is using a D8,

a PD4 Pipe Layer, a No. 6 Shovel, an HT4 Shovel and a D13000 powering an excavator. Working on the hangar area, C. D. Perry & Sons, also of Plattsburg, is employing seven D8s, four No. 80 Scrapers, one D7, two D4s and three DW20 Tractors with Scrapers. The Frederick Raff Co., Inc., is using two D8s and Scrapers and a D6.

Concerning performance, D. J. Dutcher, vice president of his outfit, says: "It has been my experience that Caterpillar* equipment is more dependable and stays on the job better than any other make. The complete line of Caterpillar-built machines offers me the right equipment for every job. Wherever I go, I find it backed up by good parts and service." Charles Wilber, superintendent for C. D. Perry & Sons, reports: "Because of their low maintenance cost, ease of operation, dependability, excellent service and parts facilities and ability to operate in any weather, I am very well satisfied with our Caterpillar units."

Standardizing on CAT*-built equipment has other advantages, too. Many parts are interchangeable, cutting down time and parts inventory. Operators and machinists, familiar with one make of machinery, get more work out of it. And the nearby Caterpillar Dealer provides time-saving, money-saving one-stop service whenever needed. See him —ask him to show you how you'll profit more by standardizing on Caterpillar equipment.

Building access road, D8 with No. 80 Scraper handles 20 cu. yds. a load on 1200-ft. one-way hauls.



Piling brush for burning, this shovel gets dependable, low-cost power from its honestly rated Cat D4600 Engine.

Versatile Cat HT4 Shovel backfills trench, while a D4 with PD4 Pipe Layer (not shown here) lays 38-in. pipe.

**CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS, U. S. A.**

*Both Cat and Caterpillar are registered trademarks—®

Briefs

from the YEOMANS GUARD

*Strange Things that can be Pumped*

**"Transporter" Cuts Handling Costs—**
**Pumps "Unpumpable" Materials.**

Just imagine a pneumatic device—no moving parts, never requires cleaning or maintenance, completely automatic, absolutely safe—that will handle

**• foundry sand • paper pulp • packing house wastes • ashes •**
**• powdered coal • tannery wastes • cannery wastes • food materials •**
**• sugar, bagasse • sludge • screenings • and many others.**

This is it . . . the *"TRANSPORTER."*

A leading automotive foundry employs a multiple set-up of "Transporters" to deliver measured batches of prepared core sand to many core-making stations—a highly ingenious system, completely flexible, *controlled at a central panel by one man!*

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☐ Please send TRANSPORTER Bulletin.

**oil • tar • paint • acids**
**alkalis • molten metals**
**salts • abrasive liquids . . . .**
**the PNEU-PUMP will handle them.**

If you have a pet nuisance that is difficult or costly to handle—one of those listed, or another we've missed—find out about the PNEU-PUMP.

Here's a "quickie": PNEU-PUMP is pneumatic, automatic, immune to high temperatures; handles *small* volumes as well as large. It's as near fool-proof equipment as you can find.

Above all, its simple to manufacture—hence, low-priced.

Sound interesting?

☐ Please send PNEU-PUMP Bulletin.

**18,000 gpm of FLY ASH and ASHPIT**
**DRAINAGE Handled by YEOMANS Pumps.**

*Moral:* Bring Tough Problems to YEOMANS.

Late in 1950, four YEOMANS vertical submerged centrifugal pumps were installed in what is said to be the largest* electrical power generator station in the United States—for removal of fly ash and ashpit drainage. The pumps are mixed-flo units, of 14-inch size and 4500 gpm capacity—for a total of 18,000 gpm.

Because of the highly abrasive character of the water with its heavy ash content, the pumps are of special construction—including non-clog wear-resistant impellers; shafts, shaft sleeves, castings and impeller wearing rings of special material; and corrosion-resistant bearings.

*Performance:* Wholly Satisfactory.

Aside from the immense satisfaction derived from solving a truly "difficult" problem like this, it is exceddingly interesting to note accelerating pace at which Industry is referring its perplexing handling problems to specialists like ourselves. Production men's chief concern with any proposed unit is—"will it do our job dependably?"

In the light of the substantial savings in time, labor and maintenance, the original equipment cost is relatively unimportant.

Have you a "problem" material?—Consult us!

*Our authority: that eminent firm of electrical and power plant engineers, Sargent & Lundy.

Call your local Yeomans representative listed in the Yellow Pages of your telephone book under "Pumps" or write factory direct.

**YEOMANS BROTHERS COMPANY**

**1999-5 No. Ruby Street, Melrose Park, Ill.**

**Pumps for Buildings, Municipalities, Industrial Applications and a Complete Line of Sewage and Waste Treatment Equipment.**

## CITY BY CITY

### Goal: A Modern Port

**New Orleans**—Plans for a $44-million modernization program for the port of New Orleans have been announced by the Dock Board.

Wharf improvements, costing some $15 million, will be the first phase of a long-range program that is expected to take 8 to 10 years to complete. At present, New Orleans is facing the last stages of a $30-million port improvement program that has been underway since World War II.

The new program calls for a face-lifting of all timber wharves in the harbor, from Louisiana Ave. to the Industrial Canal, plus a five-acre expansion of the foreign trade zone, and a new wharf at Nashville Ave.

Other projects will include expansion of the railroad yard at the public grain elevator, and channel improvement in the Industrial Canal as well as dredging of a turning basin for ocean vessels.

When the program is completed, New Orleans will have modernized and concrete-decked wharves with loading capacities of 500 lb per sq ft or more.

The wooden wharves, many of them dating back 50 years, were designed to support a cargo pressure of only 200 or 250 lb per sq ft. Today, with fork-lift trucks and other mechanical operations assisting loading work, flooring of much greater endurance is needed. To achieve the higher capacity, steel frames instead of wooden ones will support the concrete floors.

### Business Is Good

**Las Vegas**—Three more resort hotels are planned for Las Vegas at a cost of more than $30 million.

Two of the hotels will be built on Las Vegas' famed "Strip", and the third will go up on the Tonopah Highway about a mile beyond the city.

One of the downtown hotels,—the $7.1-million Lady Luck—will be a multiple-unit structure containing 254 rooms and 22 penthouse suites. It will include a 750-seat theatre-restaurant, a casino and six specialty shops.

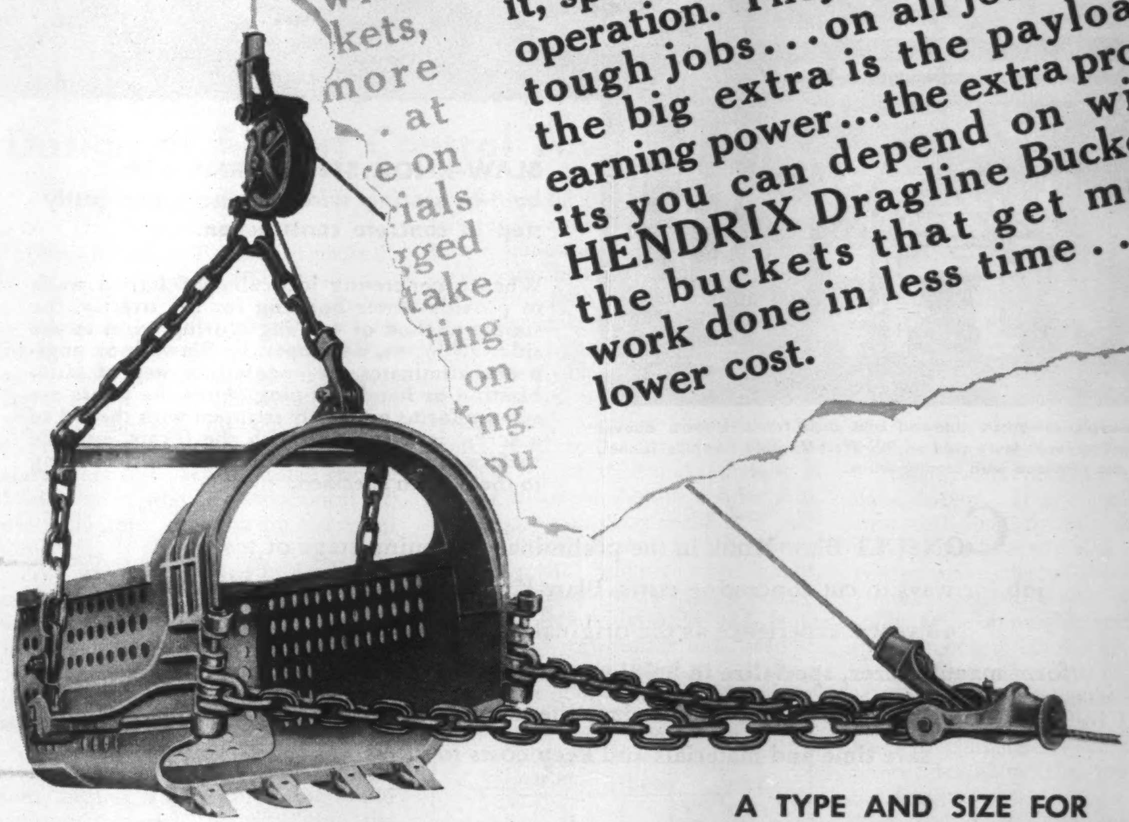
The second downtown hotel, to cost $11 million, will be an 800-room, six-story structure adjoining the Lady Luck. It will include a convention hall seating 2,500 persons, a banquet hall for 1,500, a theatre-restaurant for 1,000 persons, and 25 shops.

Plans for the third hotel, the International Spa, Inc., call for a $15-million shopping center, theatre, casino.

## Rugged, Dependable Construction

# BOOSTS PAYLOADS

HENDRIX Buckets are on the move wherever materials need to be moved! Their rugged construction and ability to take it, speeds the entire excavating operation. They last longer on tough jobs . . . on all jobs. But the big extra is the payload earning power . . . the extra profits you can depend on with HENDRIX Dragline Buckets, the buckets that get more work done in less time . . . at lower cost.



**A TYPE AND SIZE FOR EVERY DIGGING PURPOSE**

**¼ to 40 Cubic Yards**

Hendrix Lightweight Dragline Buckets

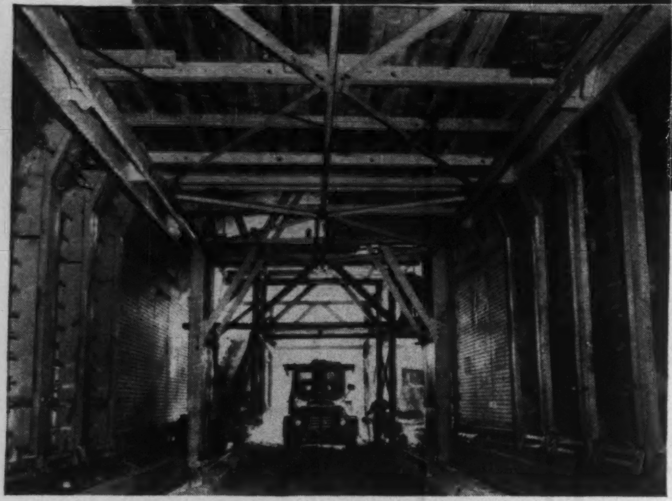
*Hendrix Buckets available without perforations*

**HENDRIX MANUFACTURING CO., Inc.**
MANSFIELD, LOUISIANA

*Here's Another Way*

# BLAW-KNOX STEEL FORMS

## CUT CONCRETING COSTS



**Blaw-Knox telescopic combined sidewall and arch forms (shown above) and telescopic ceiling forms were used on this West Virginia Turnpike Tunnel. Sidewall forms are provided with scoring wires.**

**BLAW-KNOX STEEL FORMS *with built-in scoring wire* eliminate one costly step in concrete construction.**

When a concreting job calls for scored walls to provide better bonding for tile overlay, the simple method of welding scoring wires to the sidewall forms, developed by Blaw-Knox engineers, eliminates the once costly step of sandblasting or hand chipping. After the pours are set, the forms are easily stripped with the aid of a screw jack integral with the forms, and the surface of the cast wall will be scored according to the pattern specified.

CONSULT Blaw-Knox in the preliminary planning stage of *your* job for ways to cut concreting costs. Blaw-Knox engineers, backed by over 40 years' experience as the original and most prominent steel form manufacturer, specialize in helping you plan for the simplified forming methods that often reduce the number of necessary operations, save time and materials and keep costs low.

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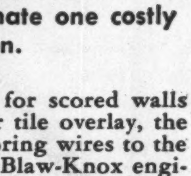
BLAW-KNOX

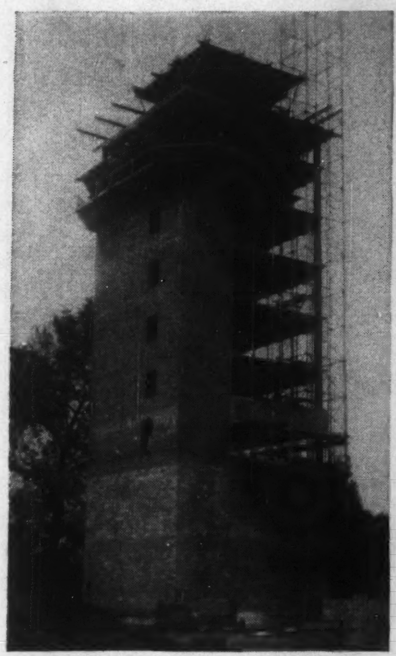
**STEEL FORMS**

**WRITE FOR BULLETIN 2430**

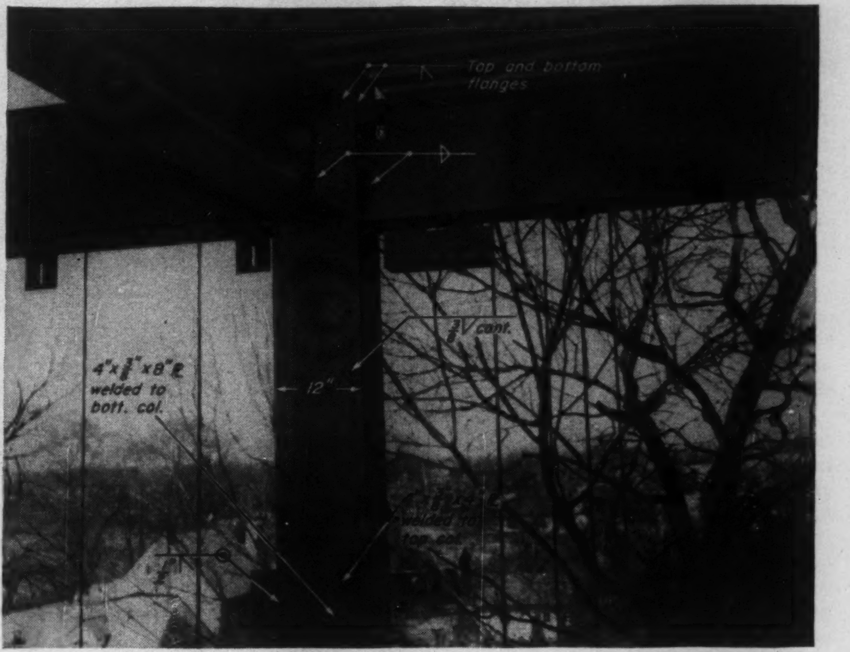
**It contains special design suggestions and complete details about Blaw-Knox Steel Forms and the consultation service that is available to any contractor without obligation.**



**CONSULTATION SERVICE BY BLAW-KNOX**



**CONTROL TOWER** 120 ft high at Columbus airport has a welded steel frame.



**RIGID CONNECTIONS** join wind girders to box columns. Clips on column (bottom) helped make the splice.

# Square Welded Columns Aid Wind Design of Airport Control Tower

**Jerome Lamprecht**
Project Engineer
Van Rensselaer P. Saxe, Engineer
Baltimore, Md.

Providing wind resistance was a major problem in the design of the new 30-ft-square, 120-ft-high airport control tower at Columbus, Ohio. Though the building has six main steel columns, one pair is so close to the others and has such small gravity loads, we found it economical to use only four columns in the wind design.

We attempted at first to design the connections as a semi-rigid type, which would take wind loads only, the steel beams being designed as simply supported for gravity loads. However, we discovered that column stresses might be excessive.

Rigid welded connections, instead, were specified for the ends of the four beams framed into the wind columns at each floor. Thus, the columns must take gravity moments as well as wind moments.

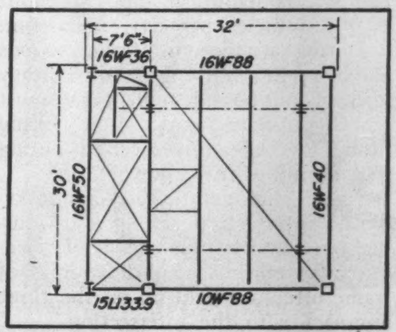
Deciding on a section to use for the columns was a difficult task. Since the tower was almost square, the column moments due to wind were almost equal about both major axes. The simplest section, made by adding plates between the flanges of a rolled shape, had to be abandoned not only because of the inefficient use of steel in the web, but because the very large sections required were architecturally undesirable.

We also investigated pipe columns but found that standard rolled pipes of a practical diameter were not of sufficient strength.

We finally chose a column made up of four plates, welded to form a square vertical box. Cost of fabrication, we found, was more than offset by economical use of steel and the ease in making the welded-beam connections.

The columns were held at a constant outside dimension, the thickness of plates varying with height. Use of a constant dimension simplified shop detail drawings and fabrication for the columns and beams.

Columns were fabricated with a continuous fillet weld in each corner. An intermittent weld would have been structurally sufficient, but the continuous weld was used to simplify fabrication and seal the hollow column from moisture. There is no difficulty in fabricating this type of column.



**FRAMING PLAN**—Sizes are shown only for beams with rigid connections.

Use of patented erection seats and clips made shop fabrication simpler by elimination of punching for bolts or rivets. These same erection units facilitated erection and plumbing of the structure in the field.

Pipe columns, because of their adaptability for required electrical work for roof instruments, were selected to support the overhanging roof.

Hollow metal deck was used for the floor system. It was welded to the structural steel framing and covered with a thin concrete slab. This floor system was selected because of its lateral strength, light weight and ability to accommodate underfloor conduit necessary to service the many electrical requirements in a building of this type. Installation of the floor was easily accomplished because the welded connections eliminated all projections above the top flanges of the floorbeams.

A spread footing underlies the entire tower. Transverse moments are taken by concrete foundation walls tied to the footing.

Structural steel was fabricated and erected by C. E. Morris Co., Columbus. J. E. Greiner Co., Baltimore, is the consulting engineer on this project for the City of Columbus, with R. B. Maguire as resident engineer. Van Rensselaer P. Saxe, Baltimore, is the structural consultant.

Spring St.
33
Sandusky
St.

Intersections like this, at Sandusky and Spring Streets, will be modernized as . . .

# Columbus Breaks Its Biggest Bottleneck

Traffic bottlenecks in metropolitan areas, if left alone, tend to worsen to a point where they become intolerable. Then the big question at hand is: Whose responsibility is it to step in and provide relief—especially when the cost runs to million-dollar figures?

When Columbus, Ohio, was faced with this sort of a situation—at the heavily congested intersection of Sandusky and Spring Streets — it was tackled as a community problem. Three governmental agencies and one commercial interest are participating in financing the $8 million project, which is being built in two parts.

The first part of the construction is scheduled for completion by Nov. 30 of next year, at a cost of about $3.8 million. Of this amount the federal government will contribute $1.9 million; the state, $1.2 million; and the county, $700,000.

The second and final stage will cost about $4 million. The federal government's share of this will be about $1.6 million. The county will contribute $1.1 million; the state, $900,000; and $370,000 will be paid by Sears, Roebuck & Co. The city also participates in the project, by bearing the cost of water line relocations, and sharing the cost of right-of-way acquisition.

Sears' interest in the venture stems from the fact that the completed project will furnish excellent access to a $17 million retail and mail order plant that the company will build along one leg of the improvement. An estimated 6,000 cars will use the interchange facilities daily in getting to and from Sears' new plant, when it is completed.

• **The problem**—Basically, the over-all problem was one of ever-increasing traffic volumes being handled with progressively diminishing efficiency by an outmoded and inadequate street system.

The crux of the trouble is the point at which four-lane Spring St. deadends in a right-angle connection with six-lane Sandusky St., just across the Scioto River from the central business district of Columbus. The two streets handle a total of about 40,000 vehicles per day, maximum.

During evening rush hour periods Sandusky St.—carrying its own heavy load of out-bound traffic—also must absorb out-bound traffic from Spring St. The pattern is reversed during the morning rush hours.

Signal lights at the Sandusky-Spring intersection are operated during peak hours from a control tower by traffic officers. But long lines of traffic often are held up on the three approaches to the intersection.

• **The solution**—Obvious solution is a free-flowing interchange. But this isn't so easy. The site is hemmed in by water on three sides—by the Olentangy River along the east and by the Scioto River along the south and west sides.

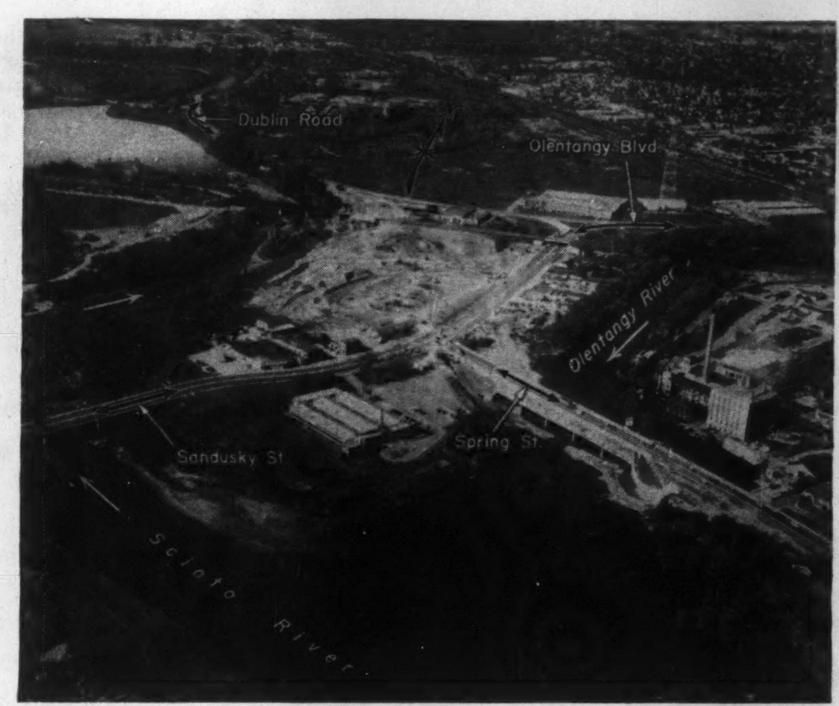
The Olentangy flows under the Spring Street bridge just before forming a junction with the Scioto which, in turn, passes beneath the Sandusky Street bridge. Consequently, the new interchange would have to incorporate these two structures. The bridges couldn't be relocated, but Spring St. bridge has been rebuilt and doubled in width as part of the program.

Part I of the $8 million project, to be completed by Nov. 30, 1955, includes this new bridge construction over the Olentangy. It also includes the Sandusky-Spring St. interchange, with three structures to separate street traffic and one to carry it under railroad tracks that traverse the area.

Completion of the first part of the program will give immediate and effective relief from the worst of the traffic congestion. The second and final part of the program will be an extension of the Sandusky-Spring Street interchange, to the north.

Connecting roads from it will join a network of divided freeways and interchanges extending down the north bank of the Scioto and up the west bank of the Olentangy.

The completed $8 million project



**NOW UNDER CONSTRUCTION between two rivers, the complete interchange will separate Sandusky and Spring Street traffic and speed it to the north or west sides of Columbus via Clentangy Blvd. or Dublin Road.**

will form a traffic hub connecting five intersecting routes: Spring St., leading into the central business district; Sandusky St., leading to the south part of the city; Dublin Road, to the northwest; Olentangy Blvd. to the north; and Goodale St., which connects with the north section of the proposed inner belt.

• **A decade of planning**—The Sandusky-Spring St. interchange isn't a project that was conceived on a moment's notice and rushed through the planning and design stages into construction. Like similar urban projects in other congested metropolitan areas, the necessity for it was recognized nearly a decade ago. But it took time, concerted action by its proponents, and public approval to bring it to fruition.

A basic plan for traffic improvement in the Columbus Metropolitan Area was approved early in 1945 by the highway department, city, county and the Bureau of Public Roads. The following year traffic surveys were made and general locations established for an expressway system to serve the area. Lack of planning funds, however, slowed up and finally stopped this program.

Nothing much happened until 1949 when a study of streets and highways in the area was made by the Automotive Safety Foundation and the Ohio Highway Study Committee. This study revealed that, at that time, 62% of the major thoroughfares were loaded to over-capacity under normal conditions.

This was followed in 1951 by a comprehensive urban expressway plan prepared by Howard, Needles, Tammen & Bergendoff, consulting engineers, Kansas City. Their report was financed by the Franklin County Regional Planning Commission, representing about 18 political subdivisions in the county.

A 22-mile freeway system was recommended in the consulting engineers' report, comprised of the Inner Belt and the North, East, West, Southwest and Olentangy Freeways. It also pointed out that, "the Sandusky-Spring Street interchange is undoubtedly the most important of all traffic interchanges in that area."

• **Bond issues approved**—By 1951 the average motorist in the Buckeye State's capital city was becoming painfully aware of the increasing traffic congestion. He was at last beginning to see the need for adequate thoroughfares. Consequently, a city bond issue of $5.8 million and a county bond issue of $2.5 million were approved at elections on April 10, 1951.

Franklin County assumed the responsibility of doing the preliminary field engineering and preparing design plans, exclusive of structures. Those were designed by the Ohio Department of Highways.

A contract totaling $2.2 million was awarded on Dec. 8, 1953 to Visintine & Co., Columbus, for construction of the Sandusky-Spring Street interchange. It also includes the three highway separation structures, the railroad underpass and the widened bridge structure to carry Spring Street over the Olentangy River.

(*Continued on page* 38)

**SPRING STREET BRIDGE is being widened to carry six traffic lanes and two sidewalks, by rebuilding superstructure of old arch bridge and adding new five-span bridge along the downstream side.**

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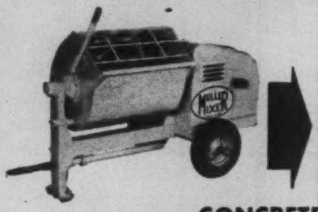

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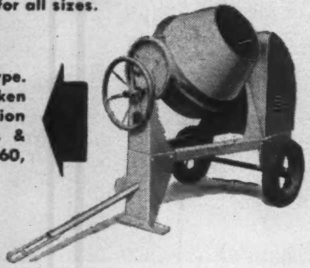
**Made in 2, 3½, 6, 6 to 8, and 9 cu. ft. sizes. Electric motor or gas engine power. All models have Muller Lifetime Paddle Shaft Seal to protect bearings. Power throwouts on smaller models, built-in disc clutch on larger. Many other features. Priced $180 to $996 FOB Factory. Rubber scraper blades are available for all sizes.**

**CONCRETE MIXERS**

**3 models, 3 to 6 cu. ft. capacities, tilting type. Ample size drums, fast mixing action, Timken Bearings, electrically welded, sturdy construction throughout. Power—electric motor or Briggs & Stratton Air Cooled Engines. Prices $230 to $660, FOB Factory.**



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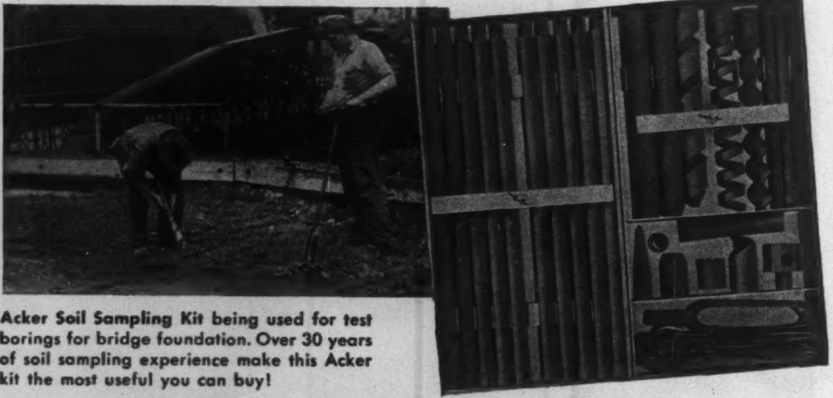

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**• Roadway details** — In general, the main roadways of the interchange will be two 24-ft pavements separated by a 4-ft raised median and flanked on the outside by 2-ft curb-and-gutters and 8-ft shoulders. Pavements will be 9-in. of unreinforced portland cement concrete on 6-in. of granular subbase, and topped with 3 in. of asphaltic concrete placed in two 1½ in. layers. Design speeds are 50 mph on main roadways and 35 mph on ramps.

Major quantities in Visintine's $2.2 million contract include: 300,000 cu yd of excavation and embankment; 35,000 sq yd of portland cement concrete pavement; 3,500 cu yd of asphaltic concrete; 24,300 lin ft of curb and gutter; 10,000 cu yd of structure concrete; 1,050 tons of structural steel, 450 tons of reinforcing steel and 11,000 lin ft of cast-in-place reinforced concrete piling. They started construction on Jan. 11, 1954 and have a completion date of Nov. 30, 1955.

**• Spring Street bridge**—Widening the existing 40-ft roadway bridge carrying Spring St. over the Olentangy River involves both remodeling and new construction.

The completed structure will carry two 38-ft roadways separated by a 4-ft median, and flanked by a 4-ft sidewalk along each side. The old bridge is a seven-span open spandrel arch structure. It will be rebuilt from the piers up as a five-span open mandrel arch to carry one-half of the roadway. The other half of the bridge will be a new five-span continuous steel beam bridge, with reinforced concrete deck and substructure. Span lengths of the new bridge are 79 ft, to match the old bridge.

One point of interest in remodeling the old bridge is that two of its seven original spans can be eliminated, since the remaining five spans will provide adequate waterway for floods. The reason is that construction of the Delaware Dam on the Olentangy now helps control flood flows at Columbus.

**• Engineers in charge** — Franklin County's part of the program is in charge of Guy Elbin, county engineer. Cletus McPherson is project engineer. For the Ohio Department of Highways, W. J. Cremean is engineer of urban projects. Harold F. Gerold is deputy director, Division of Design and construction, reporting to S. O. Linzell, director.

Visintine & Co., contractors on the project are represented by co-owners James A. and James J. Visintine. Tom Visintine is job superintendent.

# TWO-WAY HARBOR SERVES HARMAR COAL PROCESSING PLANT

At its new preparation and cleaning plant along the Allegheny River near Pittsburgh, Harmar Coal Company is utilizing the advantages of water transportation in two separate ways. Coal received in barges from another mine is unloaded and added to coal mined at the plant location. Then, all coal from the processing plant is loaded on barges for shipment to a steel mill.

This efficient, large tonnage operation is handled smoothly in a modern harbor constructed by Dravo Corporation. It consists of 25 steel sheet pile cells, two of which form a foundation for an unloading crane and receiving hopper.

This type of waterside facility, pioneered by Dravo, can be adapted to the needs of all industry, large or small—from a single cell to installations over a mile in length. In the last few years alone, more than 75 separate docks have been constructed for chemical and steel plants, coal mines, utilities, railroads and others.

This is just one of many ways Dravo has been serving business and industry for more than 60 years. Dravo considers customer satisfaction an essential factor in all its products and services. DRAVO CORPORATION, GENERAL OFFICE, PITTSBURGH 25, Penna.

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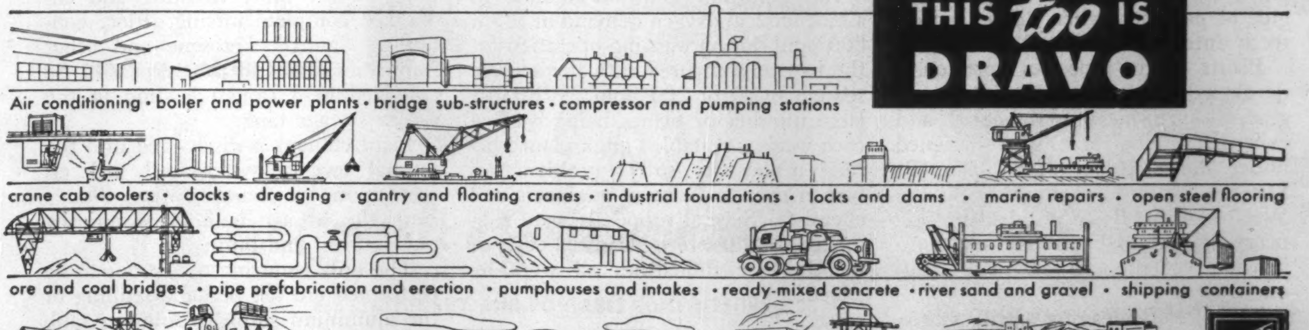
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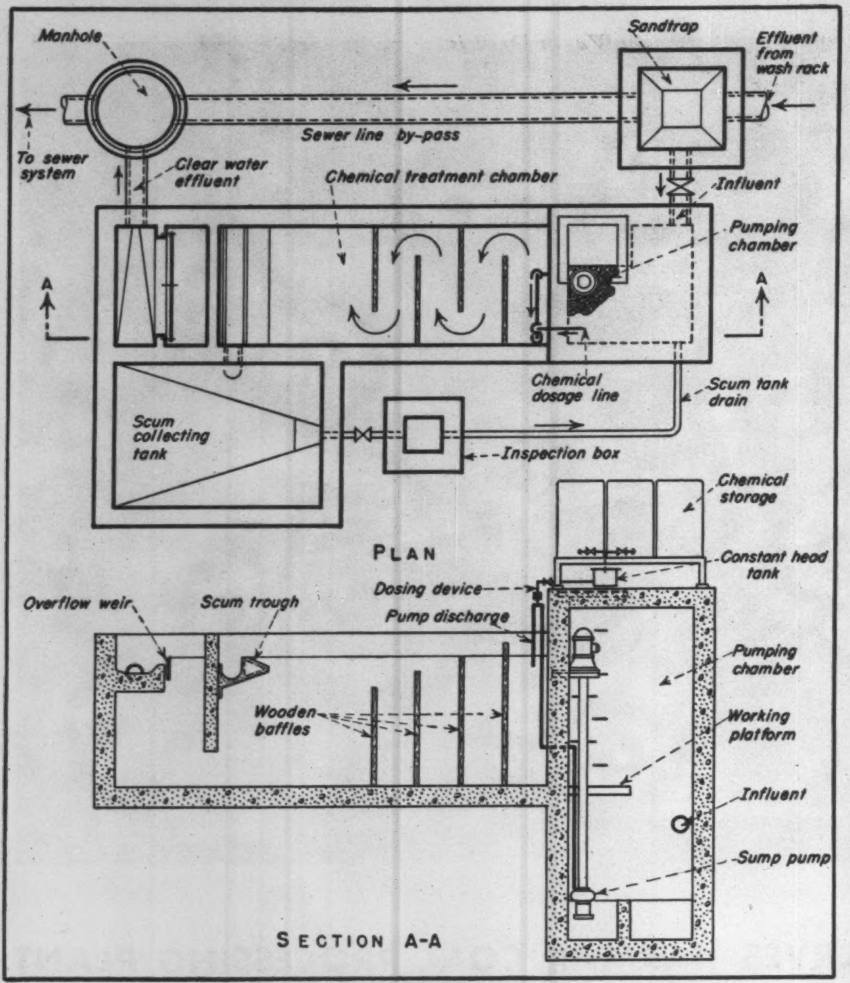


# Cheap Disposal Plant Helps Air Force Get Rid of Heavy Petroleum Wastes

To the United States Air Force in Europe goes credit for development of a waste disposal process that may prove useful for commercial as well as military air installations.

Disposal of waste from aircraft washing racks has been a serious problem during recent years. Consisting of high-concentration petroleum emulsions, the waste has proved detrimental to ordinary sewage treatment systems, and has caused a dangerous degree of pollution when discharged directly into streams.

Plants and processes previously developed by civil and military engineers have been complicated and expensive. The new plan—designed under the direction of William R. Stevens, sanitary engineer with the Wiesbaden Air Base, Wiesbaden, Germany—is said to be simple and inexpensive, yet provides adequate treatment.

The aircraft cleaning agent, a commercial product commonly known as "gunk", is diluted with kerosene in a ratio of one to nine by volume and sprayed on surfaces of the aircraft. Subsequently it is rinsed off with hot or cold running water.

The washing of one C-47 type plane requires 50 gallons of cleaner and approximately 2,000 gallons of water which, when dumped into Wiesbaden storm drains, results in a pollution load amounting to 1.5 to 2.5% solution of the solvent cleaner.

Raw-emulsion pollution amounts to a biochemical oxygen demand of about 800 ppm during washing operations at the base as compared with the average sewage BOD of 200 ppm. With the large number of planes being washed each week, a suitable "gunk plant" became a necessity, so the problem was turned over to German engineers and chemists. Several proposals were submitted, but due to high initial costs or maintenance difficulties all were rejected.

• **Plant development**—Stevens, working with full awareness of limited funds and non-skilled personnel, developed the pilot plant that subsequently was accepted as a standard design adopted for use at all bases in the European Theater.

The plant, representing a total cost of only $3,500, can be constructed, operated and maintained by persons locally available.

After an extensive experimentation with several coagulants, it was found that aluminum sulphate produced the best results without the usual pretreatment that is required by other materials.

This material produced a floating floc and reduced precipitation almost to zero. An optimum dosage of 700 ppm of aluminum sulphate was required to break down the emulsion. BOD and total solids in the solution were reduced by more than 90%.

It also was discovered that after the emulsion was mixed with the aluminum sulphate solution, further agitation was unnecessary—even detrimental. The break-down process in the chemical treatment chamber continued most efficiently when the plant was simply left alone.

• **Design features**—Washrack drains are constructed as modified catch basins that serve as sand traps and stormwater overflow. These are led directly into a pump sump from which wash water is pumped into a flocculation tank, with aluminum sulphate solution added at the end of the pump discharge line.

Dosing is accomplished through use of a modified injection nozzle set in a constricted section of the discharge line. The dosing solution is fed to the injection line from a constant-head tank located directly beneath twin chemical storage tanks (50-gallon oil drums).

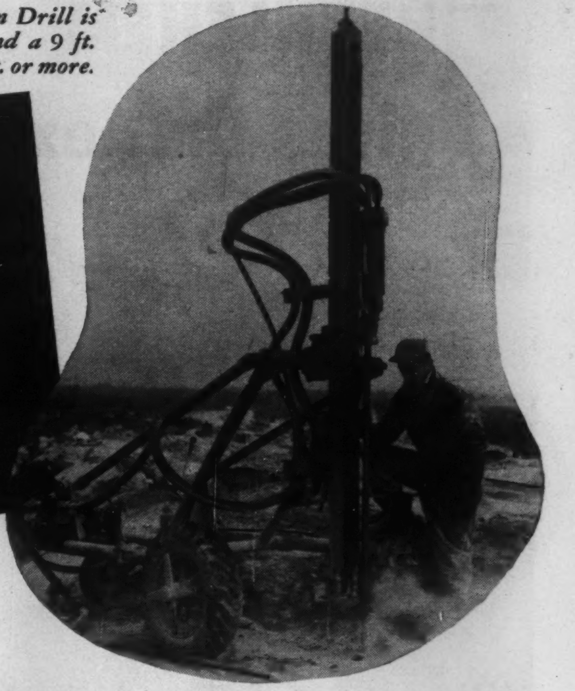
Rate of flow is regulated by a needle valve, and operation of the dosing mechanism is controlled by a solenoid valve that operates in conjunction with the pump under control of a float switch in the pump sump.

The flocculation tank is provided with a series of around-the-end baffles that prevent short-circuiting and encourage complete mixing. Floc, containing "gunk", kerosene and other impurities floats to the surface to be collected in a trough leading to the sludge storage tank.

Plant effluent is discharged into the normal sewerage system with little effect upon its characteristics. Sludge from the storage tank is periodically pumped out and burned.

The only recurring operations to be performed are the periodic refilling of the aluminum sulphate solution tank and the collecting and burning of the sludge.

*The Joy Mediumweight Wagon Drill is designed for a 4 in. drifter and a 9 ft. feed travel. Drills easily to 24 ft. or more.*



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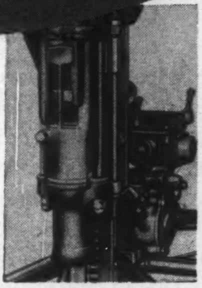
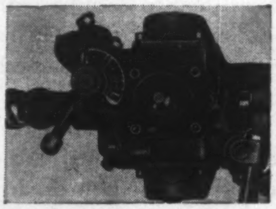
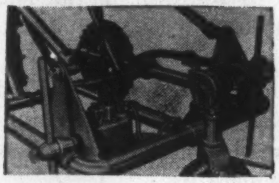




**"DRILL AND BLOW"**



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**POSITIVE-LOCKING BRAKES**

**JOY-PIONEERED CADMIUM PLATED DRILL** Only Joy Drills offer this silver-like protection (inside and out) that prevents rust, corrosion, and piston scoring—aids normal lubrication.

**JOY-PIONEERED "DRILL & BLOW" FEATURE** All Joy Wagon Drills blow dust and cuttings from the hole *while drilling*—no need to stop for blowing. Single drill-control lever for speed and convenience.

**JOY-PIONEERED HYDRAULIC LIFT** The drill, feed, and supporting arm are raised to drilling position in seconds. No laborious cranks or worm gears. Opening a valve lowers the frame quickly and smoothly.

**JOY-PIONEERED WAGON BRAKES** Only Joy Wagon Drills have positive-locking brakes which do away with chocks and rocks, reduce setup time.

For complete details on Joy Wagon Drills, write for Bulletins GG-2C and GG-2D, to ***Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.*** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

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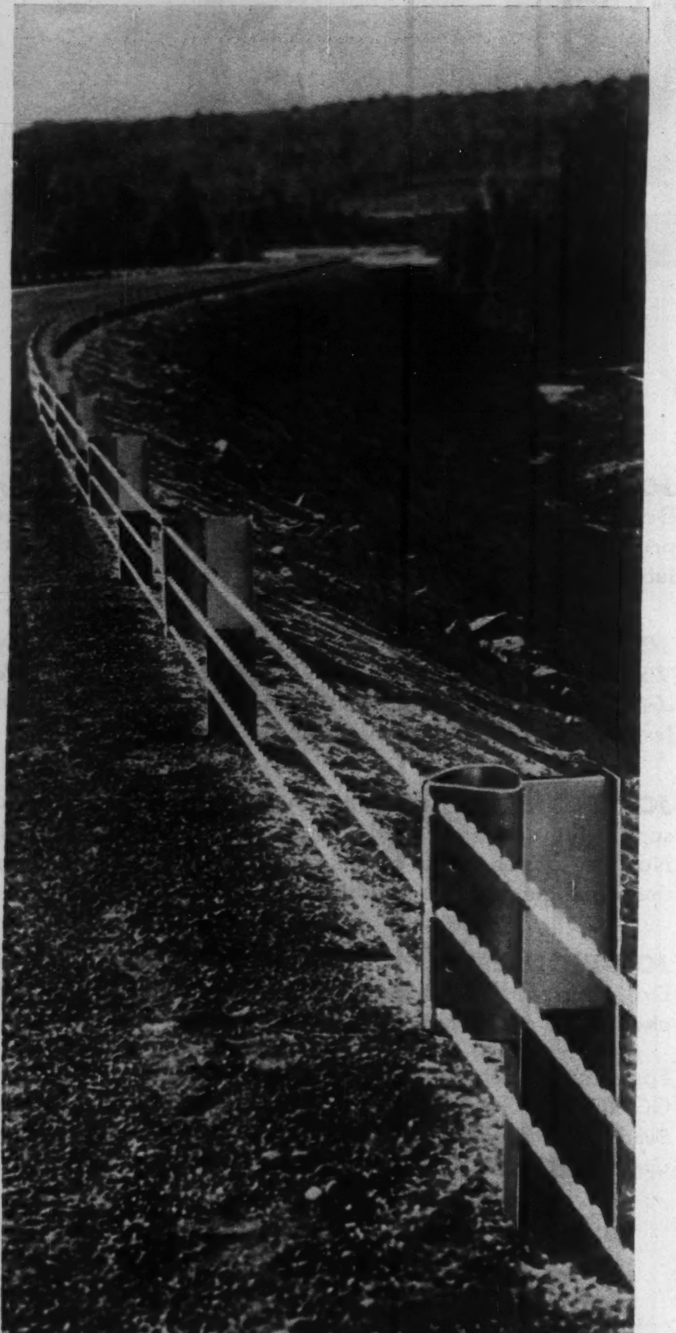
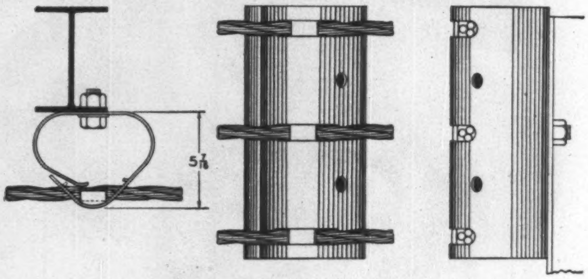


You can be sure of dependable protection for motorists when you install Bethlehem Cable Guard Rail at danger points along highways. Used at turns, embankments, bridge approaches and other hazardous locations, Bethlehem Cable Guard Rail forms a strong barrier, with high resiliency and impact-absorbing qualities.



This wire cable guard, with its special bumper-type bracket, is of simple design, easy to install, and of low initial cost. It requires little maintenance, is adaptable for use with steel, wood or concrete posts, and is furnished to comply with any state regulations. Bethlehem Cable Guard Rail can be provided with 2, 3 or 4 cables, with 1, 1¼ or 1½ in. anchor rods.

Bethlehem furnishes cable guard rail, steel posts, brackets, cable ends, anchor rods, cable splicers and fittings, all of which assemble readily and easily on the job. In addition, Bethlehem makes Safety-Beam Guard Rail, a solid beam-type guard rail.

For more information on Bethlehem Guard Rails—and all Bethlehem products for highways—call the nearest Bethlehem sales office, or write to us at Bethlehem, Pa.

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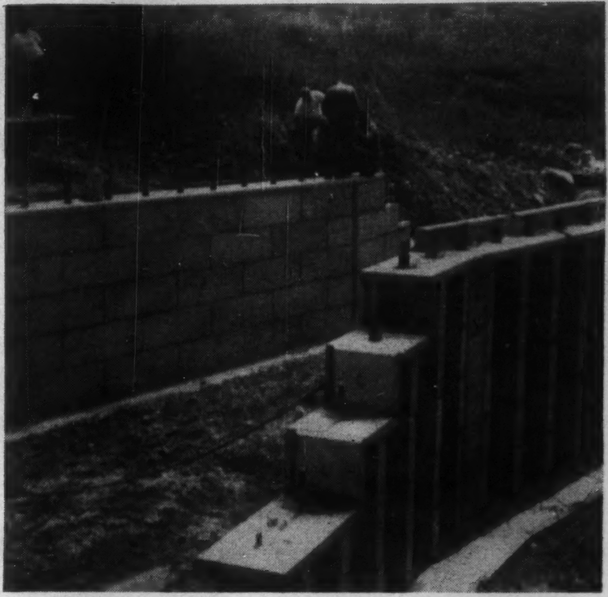
**BETHLEHEM STEEL**

BETHLEHEM STEEL

CABLES and reinforcing bars were anchored in abutment footings for a small bridge in Wyoming County, N. Y.



ABUTMENTS were formed by threading concrete blocks on the cables and applying prestress.

# Bridge Abutments Prestressed to Cut Costs

**Felix Ramsey**
County Superintendent of Highways
Wyoming Co., Warsaw, N. Y.

Having cut bridge costs considerably by precasting and prestressing superstructures, the Wyoming County (N. Y.) Department of Highways has found additional opportunities for cost cutting in substructures. We are building bridge abutments and wingwalls of concrete blocks assembled by prestressing in about half the time required for ordinary methods and at much lower cost. The saving in cost may be as much as 50% and in concrete about 75% compared with gravity-type construction.

Since 1951, we have built seven bridges with prestressed, precast concrete decks, saving considerable time, formwork and materials. We found, however, that abutments still constitute a major portion of the work.

Seeing a chance to cut costs by prestressing and precasting these walls, we investigated many different designs, including long horizontal beams and vertical or interlocking beams, most of which turned out to be impractical. What we wanted was a basic unit that could be made uniform in size, could be handled easily, would need only vertical prestressing, would not be damaged by freezing of backfill and would present a pleasing appearance. Some sort of block appeared to present the best solution.

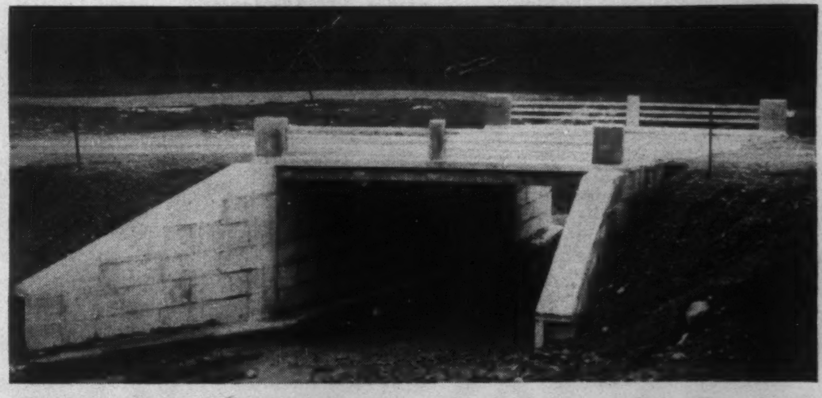
• **How block shape was chosen**—After consulting with engineers of the Freyssinet Co., we decided on an 18-in.-high block. This would allow sufficient latitude in height of abutment. If it was absolutely necessary to build an abutment not an exact multiple of 18 in., we could raise or lower the footing a little.

Spacing of the vertical tendons was an important factor in determining length of blocks. Since a 2-ft spacing seemed desirable, we made the blocks 4 ft long. This allowed us to interlock them by staggering joints. Of course, we also had to cast half blocks so that all courses could be completed on the same vertical line.

Computations indicated that a 2-ft thickness of wall would be necessary to resist overturning, but the blocks did not have to be solid. Accordingly, we decided on a block 18x48 in. by 6 in. thick, with two vertical fins at the quarter points, both projecting out 18 in. The fins taper from a thickness of 9 in. at the base of the projection to 6 in. at the outer end. Each has a vertical hole 5 in. from the base for prestressing cables.

• **How blocks are made**—Steel sheet ¼ in. thick is used for forms for the blocks. Form ends are bolted to front and back sections, to permit easy stripping. The end sections produce a flared channel 2 in. deep; when blocks are laid, the channels form a vertical, hexagonal hole, which is later filled with grout to seal the joint. In addition, a raised edge is

(*Continued on page 46*)



COMPLETED BRIDGE also has a prestressed, precast concrete deck. Top of wingwalls and abutments was finished off with cast-in-place concrete.

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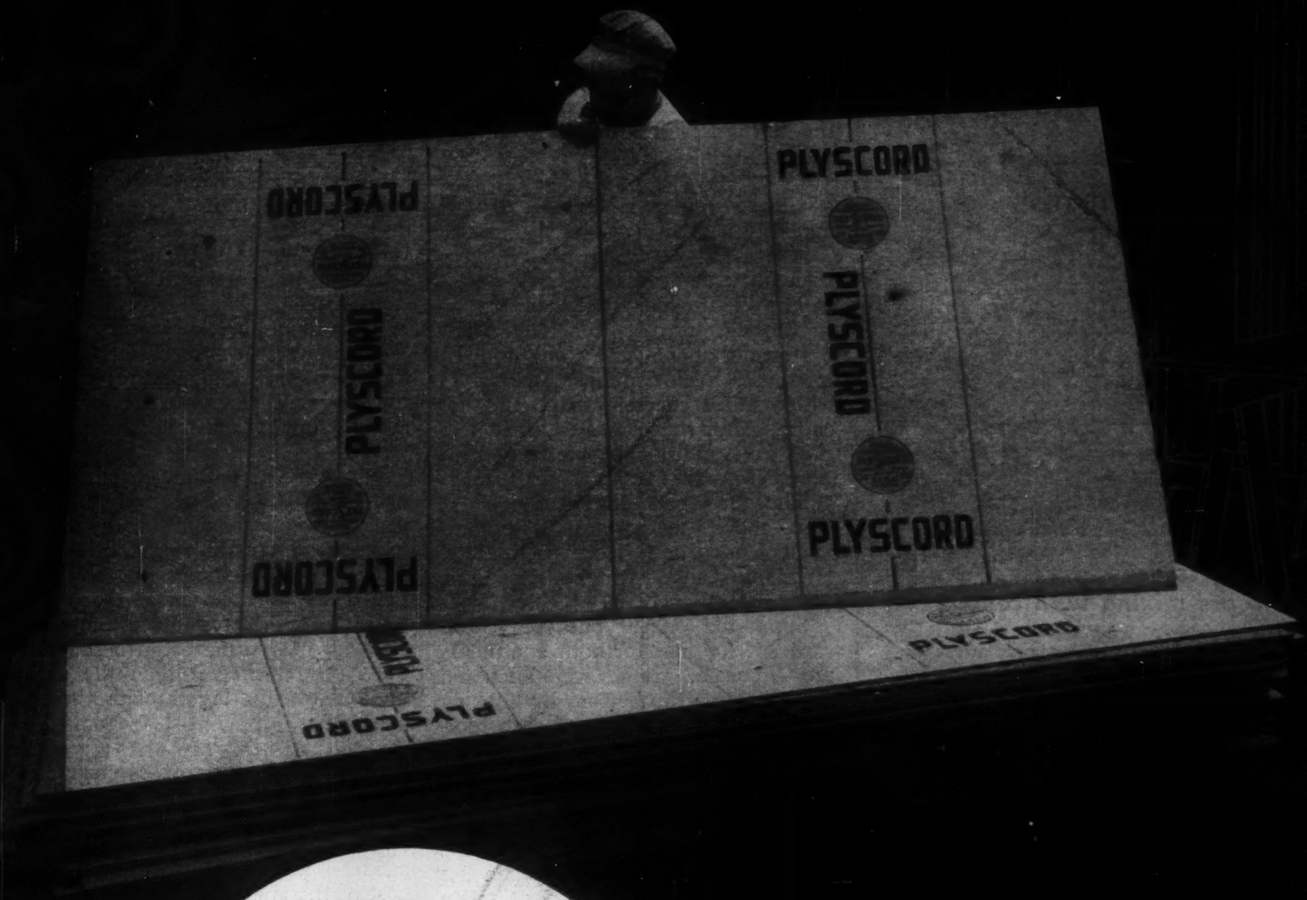
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Remember . . . ART-ROC is not just a surface film, but color that's built-in to stay . . . and it's so easy to use!

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formed on the top of each block to contain the mortar placed between blocks. For half blocks, a divider was placed in the form.

Each block is reinforced with a cage of steel mesh 1 in. in from the surface around the entire block.

The blocks are concreted upside down. After the forms are stripped, they are picked up by inserting pins in horizontal holes through the fins. These holes are so located that when the blocks are lifted, they right themselves.

**• How a bridge is built**—A typical application is Bridge No. 14 in the Town of Perry. It has a 20-ft clear span on a 30-deg skew.

The 24-ft-wide deck consists of prestressed, precast concrete plank 2 ft wide, about 22 ft long and 12 in. thick. Each contains three cables with conical concrete-wedge end anchors. After the planks were erected, they were additionally prestressed on the skew with five transverse cables.

The surface of the deck is 9 ft 7 in. above the footings. The abutments supporting it are each 28 ft long; one pair of wingwalls is 14 ft long, the other 12 ft.

Supported on 29 piles of 15-ton capacity, footings for both abutments are 9 ft wide. Cables were anchored in them near the bottom by hooking the wires. On the top of each footing, a 4x5-in. grouting channel was created, the form for the channel also serving to space the cables 24 in. c-c.

As the blocks were placed, the tendons were threaded through the vertical holes in the fins. When the bottom course was in position, a U-shaped piece of ½-in. conduit was inserted in each cable hole in the blocks, with one end extending above the top of the channel in the footing. Then the channel was filled with grout. The conduit end was left exposed so that the cables could be grouted from the bottom up after they were tensioned.

Setting blocks of this size, weighing about 800 lb apiece, presented quite a problem, inasmuch as our men had never handled anything this large that had to be set accurately. However, we developed a technique that solved the difficulty. On top of the bottom block, we placed a medium stiff mortar about ½ in. thick in which the next block was set. The front of the upper block was leveled by tapping with a 20-lb sledge. Then, wood wedges were driven carefully in the mortar crack under the front edge and the back of the block tapped down to level. Wedges also were driven under the end of the fin and left in place until the mortar had taken an initial set.

A small space was left open at the returns for the wingwalls. When the abutments and wings reached full height, forms were erected and these spaces filled with concrete to form solid corners.

To form a flat surface over the fins at the top of the walls, wire-mesh-reinforced concrete slabs were precast and set in mortar on the top course. These slabs were 2 ft wide, 4 ft long and 3 in. thick, and were perforated to match the holes for the tendons. The cables were tensioned with jacks acting vertically against the slabs.

To form part of the seat for the deck members, precast slabs 6 in. wide, 4 ft long and 9 in. high were laid atop the abutments along the front edge. The bridge deck extended about 1 ft past these slabs. To complete the bridge seat, a small form was placed along the front of the wings and along the back of wings and abutment and filled with concrete.

We were able to have one abutment and two adjoining wingwalls ready for prestressing in two days. Prestressing the cables in both abutments and all wingwalls took less than a day. (Low portions of wingwalls were just reinforced, not prestressed). Grouting through the conduits proved simpler than the usual method of grouting through the anchor cones.

**• What the bridge cost**—Average cost of the blocks was about $10 each. Cost of placing them was about $2 apiece. Prestressing and grouting averaged $4 per cable. Thus, the total cost of the abutments above the footings was:

| | |
|---|---|
| Blocks—114 @ $12 | $1,368 |
| Stressing—42 @ $4 | 168 |
| Cables, anchors—42 @ $9 | 378 |
| Additional slabs | 300 |
| **Total** | **$2,214** |

Cost of decking for this type of bridge averages about $24 per sq yd. With an area of 53 sq yd, the deck for Bridge No. 14 cost $1,272. Wheel guards and railing cost about $5 per ft, or a total of $200. So the total cost of the structure above the footings was $3,686. In evaluating this figure, consideration should also be given to the fact that almost all of the structure was precast during the winter, thus spreading the work out over the "dull" season.

According to our daily records, total cost of the bridge was $12,536.90. The difference between this and $3,686 is the cost of piles, footings, temporary roadway and bridge, cleaning up and moving to and from the bridge site.

## NEW AND BETTER WAY TO SHIELD NUCLEAR REACTORS:

# High-Density Prepakt Concrete

Prepakt techniques for placing "heavy" concrete have made possible a great advance in the radiation shielding of nuclear reactors and radiological laboratories.

Made with heavyweight aggregates, high-density concrete provides 1½ to 2 times more radiation protection than an equal thickness of normal weight concrete. While more expensive than normal concrete, its use on one project at the Hanford Works resulted in a savings of $7 million. Normal weight concrete would have been prohibitive because of the necessary additional thickness and the resulting complications in access and controls through it.

Since shields normally involve unusual height or mass, complex formwork and a maze of obstructions, placement of high-density concrete by conventional means is often impractical or impossible. The answer to this problem is the economical Prepakt technique of making concrete "in the form" by preplacing dense aggregate, then pumping all voids completely full with Intrusion Mortar made with high-density sand. This method produces a Prepakt Concrete of maximum uniform density having no aggregate segregation that would lessen shielding ability and permit radiation leaks.

An example which pinpoints the advantages of this Prepakt development is the U.S. Atomic Energy Commission's Materials Testing Reactor at the National Reactor Testing Station where the major portion of the biological shield was Prepakt-placed. This shield is essentially a hollow 32-foot cube with walls 9-feet thick (instead of 14 feet of normal density concrete) containing 100 access holes plus piping, duct work, electrical conduit and instrument lines.

Some 700 cubic yards of Prepakt Concrete employing barytes aggregate were used in this shield which has a final density of 224 lb./cu. ft. and is free from radiation leaks. And speaking of economy, conventionally-placed high-density concrete for the remainder of the shield cost 2½% more than Prepakt Concrete!

For bulk shielding at the Hanford Works, some 4000 cu. yds. of high-density Prepakt Concrete were placed using such aggregates as magnetite, limonite, steel punchings and sheared bars. By varying proportions of these aggregates, unit weights from 210 to 280 lbs./cu. ft. were achieved.

Results like this come from Prepakt's forward-looking approach to all types of structural concrete construction. Why not investigate Prepakt methods and materials for your next concrete project?

At AEC's Materials Testing Reactor, hand preplacement of barytes aggregate, necessary in tight spots around piping, was made possible by Prepakt's intruded-mortar method. Prepakt engineer (right) supervises pumping of Intrusion Mortar into preplaced aggregate from top of reactor shield.

*Prepakt maintains a qualified design and engineering service plus a complete field construction organization and functions as prime or sub-contractor. For further information, write: The Prepakt Concrete Co., Room 779-W, Union Commerce Bldg., Cleveland.*

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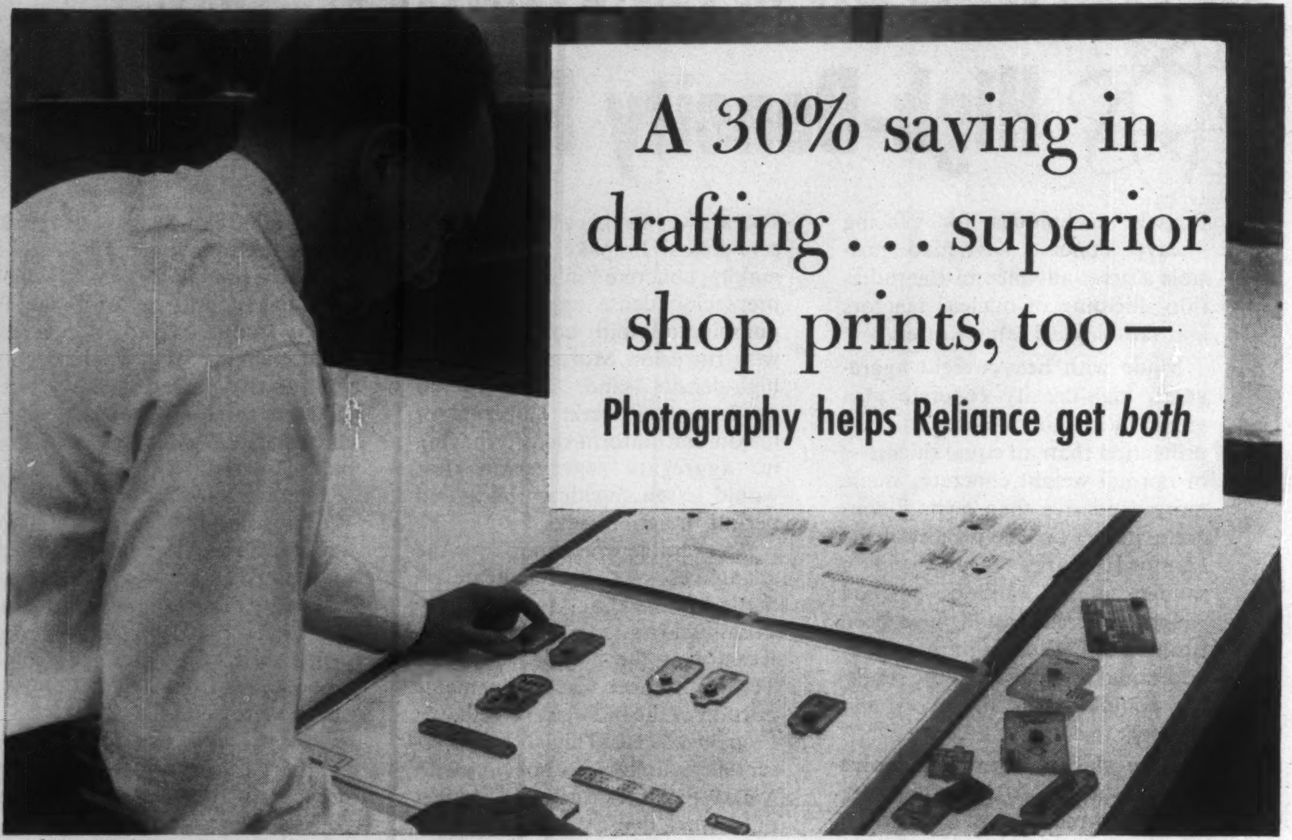
**THE PREPAKT CONCRETE CO.**
**DIVISION OF INTRUSION-PREPAKT, INC.**

MAIN OFFICE: CLEVELAND 14, OHIO
CANADIAN OFFICE: TORONTO, ONTARIO



A 30% saving in drafting . . . superior shop prints, too—

**Photography helps Reliance get *both***

**At the Reliance Electric & Engineering Co., Cleveland, Ohio, the use of photographic templates and Kodagraph Autopositive Paper has helped to lower drafting-room costs by at least 30%, besides assuring highly legible shop prints day in and day out.**

The templates—on clear plastic—represent the designs of standard components that appear again and again in Reliance's many wiring diagrams. A draftsman uses them, first, to make a preliminary drawing — positioning the templates he needs on whiteprint paper, making a print, then roughing in the hook-up lines.

After this drawing has been approved, he prints the templates on Kodagraph Autopositive Paper, using a printing frame. Simple photographic processing—under normal roomlight—produces a positive print of the layout directly. All he has to do now is add the hook-up lines, and another drawing is ready for Reliance's file of photo-lasting Autopositive "originals." *Another saving can be chalked up!*

Reliance has found these photo-drawings to be ideal printing intermediates. They're evenly translucent, durable; have crisp, dense black lines. And they produce top-quality shop prints at practical, uniform speeds in Reliance's direct-process machine.

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# NEW PRODUCTS

## Curtain Wall Panel

### Sandwich Construction Gives It Low U-Factor At Low Cost

The new U-16 curtain wall panel is of the sandwich type, providing an acid-resisting porcelain enameled exterior face, rigidity and flatness resulting from a concrete fill, a permanent vapor barrier plus fiber glass insulation and an inexpensive galvanized or plain steel interior face. Size may range from 2 sq ft to 32 sq ft in this new design.

The panel gets its name from the fact that it offers a U-factor of .16 in its standard 2-in. thickness. It will, however, provide even lower U-ratings if thickness is increased.

The panel consists of an exterior pan formed from enameling iron, with 1-in. flanges and welded and ground corners. 1¾ x ⅛ in. copper coated studs are stud welded on 9-in. centers to the interior surface of this pan to provide anchorage for fill. The pan is then coated on all surfaces with an AA acid-resisting quality porcelain enamel and flat spring clips then positioned on each stud at a level below the 1-in. fill of insulating concrete. The studs and imbedded clips anchor the concrete in addition to normal bonding.

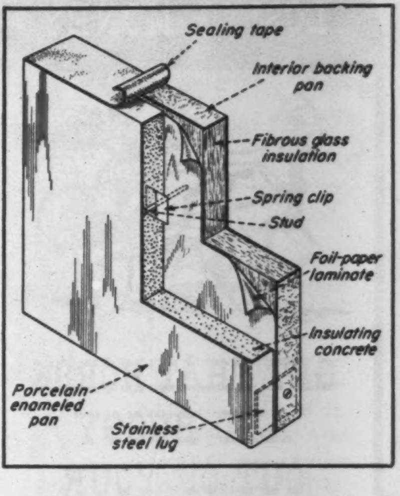
A vapor barier is created by next placing a layer of aluminum foil-kraft laminate next to the concrete, impaled over the projecting studs. A 1-in. layer of fiber glass insulation is next impaled on the studs and a backing pan put in place. This pan may consist of formed galvanized steel, porcelain enameled sheet, or any plain metal deired.

Stainless steel lugs on the flanges of the exterior pan extend under the flanges of the backing pan and secure the panel faces in position by means of stainless metal fasteners. The entire perimeter of the completed panel is then sealed with 2-in. wide synthetic rubber, vinyl, or aluminum foil tape depending upon the application and method of erection.

Features claimed for the panel include the extra reliability of sturdy mechanical fastening methods throughout with no adhesives used. All parts of the panel are completely incombustible. There is a minimum of through-conductivity of temperature by metal so as to eliminate problems of condensation and dust pattern formations on inner or outer surfaces. Further, the aluminum foil vapor-barrier functions to prevent moisture transfer in either direction and reduces radiant heat.

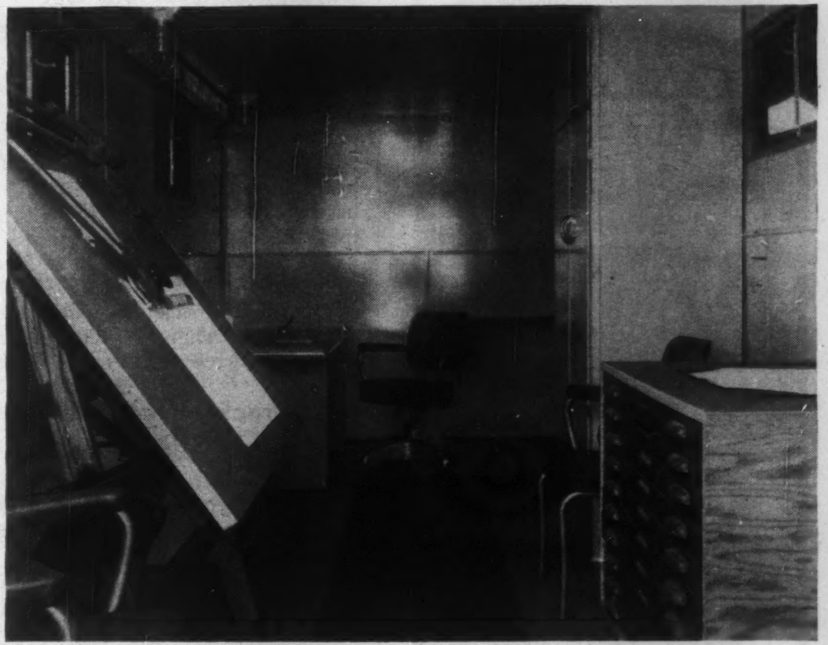
All raw edges of panels are removed from exposure to weather and are sealed under the moisture-proof sealing tape. Panel edges are further sealed away from weather by being imbedded in mastic during erection and, in turn the mastic is shielded by an exterior stop moulding. Nominal thickness is only 2 in. and weight is approximately 9 psf.

Prices will vary somewhat depending upon quantity and panel sizes involved, but the manufacturer states that large quantities of reasonably large panels can price as low as $2.10 psf, ranging to as high as $3.50 for small footage in small panel sizes, f.o.b. plant. These prices are based on AA acid-resisting porcelain enamel on one side only. Average prices might level at about $2.50 psf porcelain enameled on one side only, or $2.80 psf porcelain enameled on both.



Fifty standard porcelain enamel colors are offered, plus a large variety of two and three tone stipple finishes. Colors are guaranteed permanent. The Erie Enameling Co., Erie, Pa.

(*New Products continued on page 50*)



## Steel Trailer Reduces Fire Hazards

**A new, all steel, mobile office trailer has been specially designed for fire-hazard areas. Safeguards include not only fire-resistant construction, but also vapor-proof lighting and steam heating. The trailer can accommodate a large number of office devices such as desks, drawing boards, blue-print cabinets, etc., and a number of different lengths are available. Standard equipment includes a floor-to-ceiling locker, plug-in heating and lighting systems to external fixed plant supply lines, bench over wheel housing and drop-leaf table. But since lighting and heating systems must be variable according to particular usage and locale, the manufacturer can supply self-contained heating and lighting systems—either vapor-proof or conventional—and other variations. Base price for the standard unit is $1,850; optional variations on heating and lighting at extra cost. Calumet Coach Co., 11577 S. Wabash Ave., Chicago 28, Ill.**

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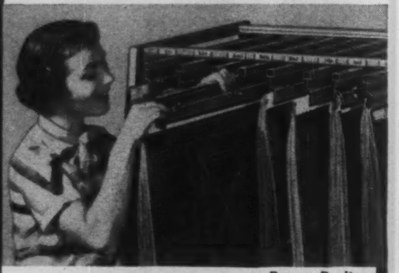

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## Grader Front Wheel Assembly Beefed Up With Wear Reduced

Design changes in the front wheel assembly of the Allis-Chalmers Model D motor grader are said to add further strength to this accessory and the machine.

Design revisions have reduced the number of wear points on the leaning front wheel assembly and on the grader's steering mechanism. Shim adjustments are used to take up knuckle wear and bushings have been replaced by tapered and roller bearings. The greater weight of the new front axle adds to the overall weight of the Model D.

Improved control over the leaning operations is reported to have resulted from reducing the travel speed of the leaning front wheels, and adding further strength to the tie rods.

The front-wheel-lean assembly is optional equipment for standard Model D motor grader. ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WIS.

## Caterpillar Tractors Get Higher Horsepowers and Speed

Greater horsepower and faster engine speeds are now available in Caterpillar D6, D4, and D2 tractors.

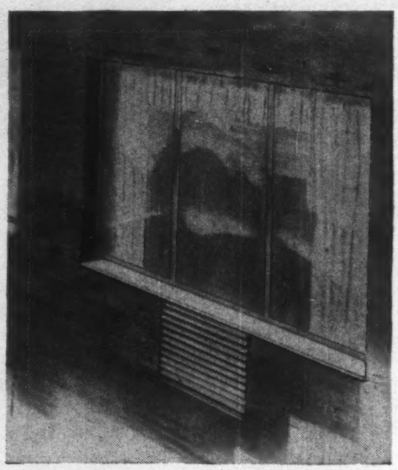
Drawbar horsepower of the D6 has been increased from 66 to 75 and rpm from 1,400 to 1,600. That of the D4 has been increased from 43 to 48 and rpm from 1,400 to 1,600. The D2 has been increased from 35 to 38 and rpm from 1,525 to 1,650. Travel speeds of the tractors will increase according to engine speeds. CATERPILLAR TRACTOR CO., PEORIA, ILL.

## 1955 Truck Mixers Feature Concrete Quality Control

The Mixometer is a concrete quality control that is featured as standard equipment on the 1955 Challenge Pacemaker truck mixers.

With it, the operator can quickly determine how fast the drum is turning, how many revolutions the drum turns per trip and the running total of drum revolutions during the life of the mixer. The operator always can be certain, therefore, that the drum is turning at the proper speed.

Available in eight sizes ranging from 3 to 8 yd capacity, the new Challenge truck mixers also offer other new features, including 2-speed operation, new drum design, advanced center of gravity, L-shape discharge blades and greater strength. COOK BROS. EQUIP. CO., 3334 SAN FERNANDO RD., LOS ANGELES 65, CALIF.



**EXTERIOR VIEW of conditioner shows louvered opening flush with building wall.**

## Room Air Conditioners Are Built Into Apartment Wall

A new technique for air conditioning apartment houses combines features found in both centralized systems and window-type room coolers. The new system uses individual room units that are specially designed and built into the exterior walls and operate independently of the heating system.

Designed to meet a need for a conditioner that has no projection on the outside of the building, the unit is also virtually flush on the interior. Thus it does not interfere with furniture, draperies or opening and closing of windows.

It has been engineered for quiet operation and requires no water or piping. Available in $\frac{1}{2}$, $\frac{3}{4}$ and 1-hp models, all units are identical in size to permit uniform construction of the wall enclosures regardless of the cooling requirements of each room.

The air conditioning fits into the wall, under a window, and does not block the view or daylight. Thermostatic cooling control of the cooling is provided to suit the comfort of the occupant. Units may be operated throughout the year as needed, and no air conditioning engineers are required to stand by.

Because every tenant is metered individually for the cost of operating his cooler or coolers, no tenant pays for the general air conditioning as in the case of a central system.

First use of the new system will be in a 16-story and penthouse apartment building underway in New York. David Rose and Associates are the owner-builders and co-developers of the new system. AIRTEMP DIV., CHRYSLER CONSTRUCTION CORP., P. O. BOX 1037, DAYTON 1, OHIO.

# PUBLICATIONS

**Calcium chloride**—A 60-page manual reports on the newly developed pellet-type calcium chloride. Entitled "Peladow" the publication describes the advantages of pelletizing and gives data on properties, specifications and applications. Separate sections are devoted to the product's use in connection with highways, concrete, tire ballast, etc. 35 photographs and a dozen charts and graphs are incorporated in the manual. INORGANIC SALES, DEPT. 1, THE DOW CHEMICAL CO., MIDLAND, MICH.

**Grouting method**—A 16-page folder describes grouting of heavy equipment with Embeco non-shrink mortar. The booklet outlines and illustrates what Embeco is, some common methods of grouting different types of equipment, the mixing and placing of grout, cold and hot weather grouting and measurable characteristics of the product. Also contained is information on recommended mixes and estimating tables plus illustrations of actual installations. THE MASTER BUILDERS CO., 7016 EUCLID AVE., CLEVELAND 3, OHIO.

**Gravity filters**—A comprehensive, illustrated 24-page bulletin, Permutit Gravity Filters No. 2539B, has been published to supersede a similar bulletin issued in 1952. Of interest to engineers dealing with water problems, it shows a complete line of gravity filters and accessories—manually operated, semi-automatic and automatic — including operating tables, rate of flow controllers and gages. Specifications, operating instructions and characteristics, outline dimensions, and typical installation photographs have been included in this new edition. THE PERMUTIT CO., 330 W. 42ND ST., NEW YORK 36, N. Y.

**Portable batch type asphalt plant**—Bulletin No. 541 covers the new Model TM portable batch type asphalt plant. One of the main features of the new plant is speed of erection; an erecting device permits the entire mixing cage to be raised in less than 30 min. The folder covers all features of the plant including gradation and weight control and stresses portability combined with a capacity of 40 to 50 tons per hour. STANDARD STEEL CORP., 5001 S. BOYLE AVE., LOS ANGELES 58, CALIF.

**Motor grader**—The Galion Model 104, 93-hp motor grader is described in a 28-page catalog. Important features of design and construction are illustrated and described and complete specifications are listed. Catalog No. 353. THE GALION IRON WORKS & MFG. CO., GALION, OHIO.

**Truck crane**—A new bulletin covers the P&H model 55 truck crane—popularly known as the Miti-Mite. The 16-pager reports on the design and features of the machine with special attention given to the convertibility of the rig to dragline, crane, magnet crane, shovel, trench hoe, clamshell. Emphasizing its mountability on any suitable truck, a spread is devoted to the crane showing it in service on various types of carriers. Bulletin TX-152. HARNISCHFEGER CORP., 4604 W. NATIONAL AVE., MILWAUKEE 46, WIS.

**Storage tank and steel plate**—Catalog 54B is the latest of the manufacturer's data books dealing with storage tank and steel plate fabrication. The 24-pager features material specifications, tank design data, foundation recommendations, accessories and fittings, computing tables for size and capacity, welding procedures, testing methods and information on all types of storage tanks and general steel plate construction. Illustrated are examples of every type of storage tank designed and erected by the company including: cone roof, Dialift, Diaflote, floating roof, Vapor-lift, sphere, irregular shaped tanks for above and below ground, steel dikes, standpipes and elevated water tanks as well as vessels and steel plate fabrication. HAMMOND IRON WORKS, 630 FIFTH AVE., NEW YORK 20, N. Y.

**Ditcher**—An 8-page catalog entitled "Unimatic CW-4 Detachable Ditcher" discusses the prime features of the machine and illustrates them as well. A picture story illustrates the detaching procedures and overall specifications complete the booklet. Form 5401. UNIMATIC CORP., P. O. Box 1166, TULSA, OKLA.

**Cooling tower**—"Cooling Water for Industry" is the title of a 36-page publication describing cooling tower construction and applications. Designated as CT-ID-0.002, the bulletin illustrates induced draft cooling tower construction with photographs, sketches, cutaway and exploded drawings. Advantages of the system are also included. THE FLUOR CORP., LTD., 2500 S. ATLANTIC BLVD., LOS ANGELES 22, CALIF.

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Gives white light of 5,000 reflected candle power with kerosene or propane.

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Model AL-21. Excellent for use as hand inspection lamp or as small floodlight. Burns 12 hours on 1½ pints of kerosene, giving 2,000 candle power white light. Weighs 7½ lb., overall dimensions 9 x 9 x 11½ in. $36 F.O.B. Chicago.

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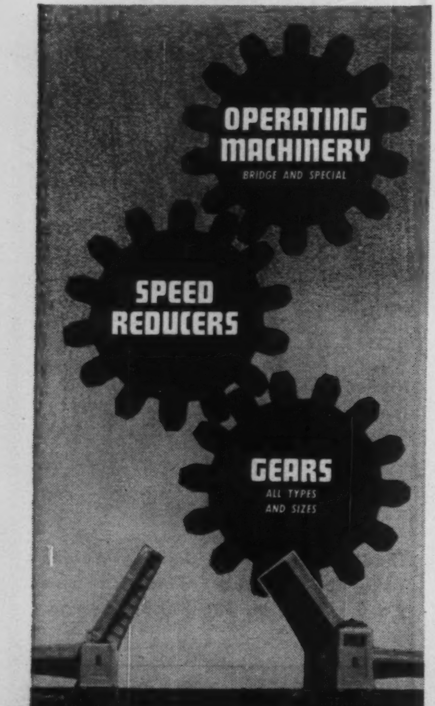

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# MEN AND JOBS

## Public Buildings Post Goes to Fred Poorman

Fred S. Poorman, Washington, D. C., has become deputy commissioner of public buildings in the General Services Administration.

Since 1940, he has been identified with military and defense construction, both as a civilian and an officer in the Corps of Engineers. Before assuming his GSA duties, he was chief of the technical division and senior assistant to the Director of Construction, Department of Defense. Poorman has also served as chairman of the Munitions Board Plant Relocation Committee and has been active in military overseas construction.

Prior to his defense service, he was with the Pennsylvania Department of Highways and later served as assistant chief engineer for the Pennsylvania Turnpike Commission.

Poorman is a graduate of Denison University and is a member ASCE, Society of American Military Engineers, and American Society of Landscape Architects.

## Public Works Officials Honored in Two States

The Professional Engineers of Oregon and two universities in New York State last month paid recognition to four outstanding careers in civil engineering and public works administration.

The Oregon society presented its award for "engineer of the year" to R. H. Baldock, chief engineer of the Oregon State Highway Department. Presentation was made at the organization's annual banquet and was in recognition of Baldock's contribution to the state's five-year, postwar $72-million highway construction program. Baldock was the 1950 recipient of AASHO's George S. Bartlett Award for conspicuous ability and achievement in the highway field. He has been associated with Oregon highways since 1915.

Among those honored last week by New York University's College of Engineering for "professional achievements and services to the common good" were:

- Irving V. A. Huie, president of the Board of Water Supply of New York City. Prior to joining the board in 1945, he served as deputy highway commissioner of the state of New York, as commissioner of the New York City Department of Public Works, and as member of the planning board of New York City.
- Thomas C. Kavanagh, a leading authority on bridge, dock, and power plant design and structural analysis. He has been associated with a number of private concerns, and has been a consultant to the federal government on atomic blast protection. Kavanagh also has taught engineering at Pennsylvania State College and at New York University.

Huie and Kavanagh were among 100 distinguished alumni similarly honored at the midwinter convocation of the college's centennial year.

Honored by another university was Bertram D. Tallamy, former New York State Director of Public Works and now director of the New York State Thruway Authority. He was cited by the University of Buffalo for leadership in his field. The citation noted that Tallamy has been appointed "as director of practically every major project carried on by this state for the last 20 years." Prior to joining the New York Department of Public Works in 1945, Tallamy was a member of the Buffalo engineering firm of Fretts, Tallamy, and Senior.

## Southern Construction Firm Expands Its Organization

Opening of two offices and changes in top personnel mark the continued expansion of Daniel Construction Company of Greenville, S. C., and Birmingham, Ala.

One of the new divisions, Daniel Construction Company of Virginia, with offices in Richmond, will be headed up by H. L. Longcrier newly elected vice president. The other, Daniel Construction Company of Florida, with offices in Jacksonville, will be managed by Harry J. Stellman.

Leading off the personnel changes is R. Hugh Daniel, Birmingham, who was elected President and Treasurer. He succeeds Charles E. Daniel, who becomes chairman of the board.

Carl G. Englund was appointed vice president and manager of the Greenville office and J. A. Dantici vice president and manager of the Birmingham office. The company was founded 20 years ago.

## Consulting Engineers Elect Francis S. Friel President

The American Institute of Consulting Engineers has chosen Francis S. Friel of Philadelphia president for 1955.

(*Continued on page 54*)

# Here's an Underground Movement you should join!

NOTHING secret about the movement toward underground gas storage. It's common knowledge that some of the largest gas companies have adopted this practical idea, for storing gas *underground* in National Seamless Steel Bottles is the safe way—the modern way.

Buried underground, National Seamless Bottles offer enormous possibilities to utility companies for future high pressure gas storage—for both emergency and peak loads. Buried bottles are safe from harm, unaffected by storms, high winds, or lightning. And they are not a hazard to or from aviation.

Fifty of these Seamless Steel Bottles, averaging 39 ft. 3 in. in length and 24 in. in diameter, will hold 1¼ *million* cubic feet of gas at 2240 p.s.i. In fact one recent installation of 2800 bottles stored 70,000,000 cubic feet of gas.

Once installed in the ground, the bottles will not vibrate or settle as a surface installation will. And the gas pressure does not fluctuate as it would above ground, because underground temperatures are relatively stable the year around.

National Seamless Steel Bottles save on maintenance, too. Unlike above-ground installations, they need not be painted periodically, nor do they require constant inspection and protection against the elements. Moreover, any group of bottles can be taken off the line for inspection or repair at any time without interrupting the gas pressure of the other groups of bottles.

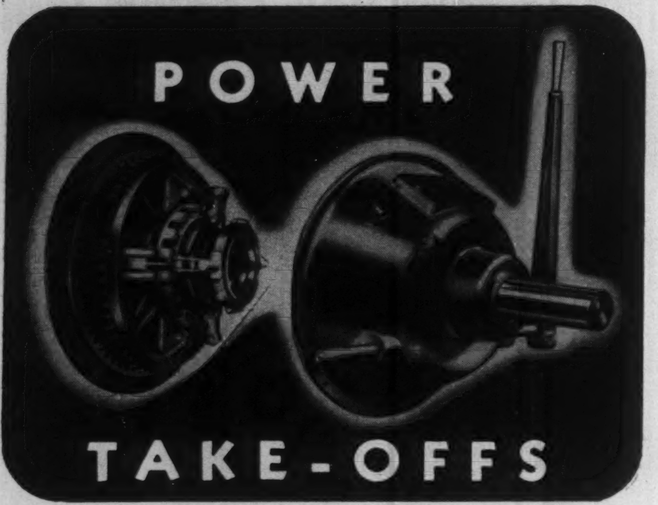
For the utmost in strength and dependability, National Seamless Steel Bottles are pierced from solid billets of the highest quality steel, leaving little doubt about uniform wall strength, and every bottle undergoes a severe hydrostatic test before it leaves the mill.

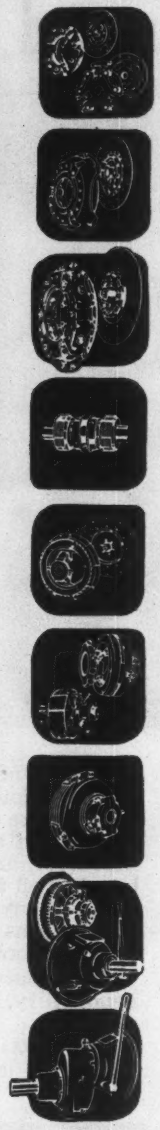
Join this popular economical underground movement. Write today to National Tube Division, United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

**NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.**
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

# USS NATIONAL SEAMLESS STEEL BOTTLES

UNITED STATES STEEL





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ROLLER BEARINGS
FINE ADJUSTMENT
ACCURATE BALANCE
S.A.E. DIMENSIONS

* The housing supports the drive shaft, which is mounted on a main bearing in the housing and a pilot bearing in the engine flywheel. The heavy-duty clutch is mounted on the drive shaft, which is extended to serve as the output shaft for the external drive, and may carry a pulley, gear, sprocket, or drive through a coupling.

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*Terhune 5-2153*

## MEN AND JOBS

Mr. Friel is president of Albright & Friel, Inc., water supply and sanitation specialists who also do work in the power plant, airport, flood control and industrial building fields. He has been a director of the American Society of Civil Engineers, president of the Federation of Sewage and Industrial Waste Associations and is currently a member of the executive committee of the United States Committee of the International Commission on Large Dams.

Other new officers of the institute include New York consultants Clinton D. Hanover, Jr., of Hardesty & Hanover, and Carlton S. Proctor, of Moran, Proctor, Mueser & Rutledge, who were elected vice presidents. New members elected to the council are Edward H. Anson of Gibbs & Hill, Inc., New York; Harland Bartholomew, St. Louis; and Gilmore D. Clarke of Clarke & Rapuano, New York.

### Men and Jobs Briefs . . .

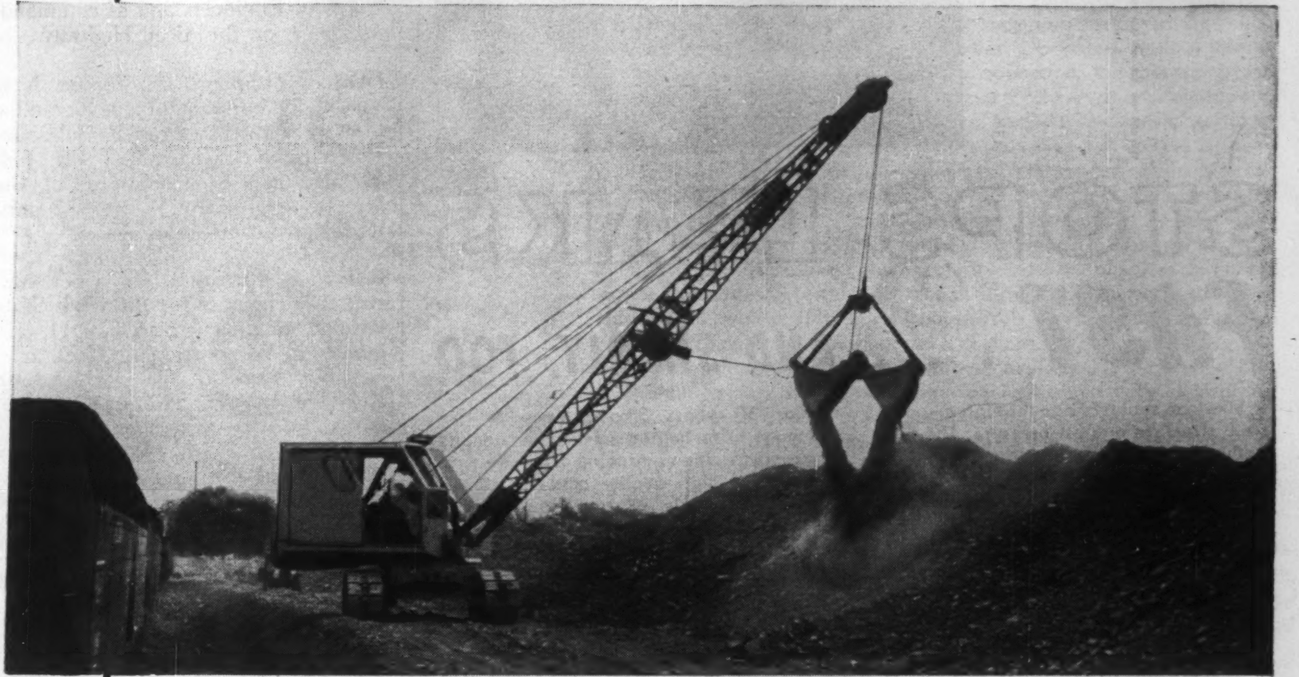
• **Careers**—New construction engineer for the Virginia State Highway Department is **J. Edgar Johnson,** who succeeds veteran staff member **T. F. Loughborough** . . . **Carl M. Smith** takes over as director of the Port of San Francisco—he's been in state service 33 years . . . **James N. Allan** is appointed highway minister of the Province of Ontario . . . **J. O. Watson** becomes chief sewer engineer for Indianapolis, Ind.

• **Associations**—N. Y. State Association of Highway Engineers elects **Edward A. Pitel** president . . . **A. H. Blank,** Erie, Pa., becomes president of the Pennsylvania Contractors Association . . . **Carl H. Wittenberg,** partner and general manager of Ford J. Twaits Co., is elected president of AGC's Southern California Chapter . . . **H. D. Callahan** becomes chairman of Tile Council of America.

• **Business**—The H. K. Ferguson Co., Cleveland, elects **Thomas H. Mitchell** and **Ralph W. Olmstead** vice presidents . . . **Carroll T. Sinclair** becomes vice president of Peter F. Loftus Corp., Pittsburgh—he'll direct the design and consulting engineering activities of the company's utility division . . . **Homer T. Borton** is elected president of The Osborn Engineering Co., Cleveland.

**F. L. McDonald,** formerly chief sanitary engineer for the Arkansas State Board of Health, joins the engineering department of W. S. Dickey Clay Mfg. Co., Texarkana . . . **Wallace H. Woodrow** is elected vice president of Hale & Kullgren, Akron.

# BAY CITY handles one of the world's heaviest ores for GENERAL REFRACTORIES CO.



This BAY CITY Model 45 is unloading and stockpiling heavy chrome ore at a railroad siding for General Refractories Co.

The chrome ore known as chromite or chromic iron, used by General Refractories Company of Curtis Bay, Maryland, in the manufacture of fire brick for steel furnaces, comes from mines in remote sections of the Philippine Islands. Weighing approximately 220 lbs. per cubic foot, it is almost as heavy as lead ore. Yet a BAY CITY Model 45 Crane handles this ore, one of the world's heaviest, with relative ease. This powerful, efficient machine, operating with an Owens "M" bucket, unloads and stockpiles chromite for General Refractories Company at an exceedingly fast rate.

BAY CITY Cranes are ruggedly built for high daily production and long, dependable service on difficult materials handling operations. They have a powerful Diesel engine, one piece cast alloy steel bases, long, wide crawlers, tandem drums in ball bearings, power booster clutches, helical cut gears and many other advanced design features that help insure time-saving, money-saving operation. Every BAY CITY is engineered for accurate balance, easy operation and low cost maintenance. For complete details, consult your nearest BAY CITY dealer.

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CRANEWAGON
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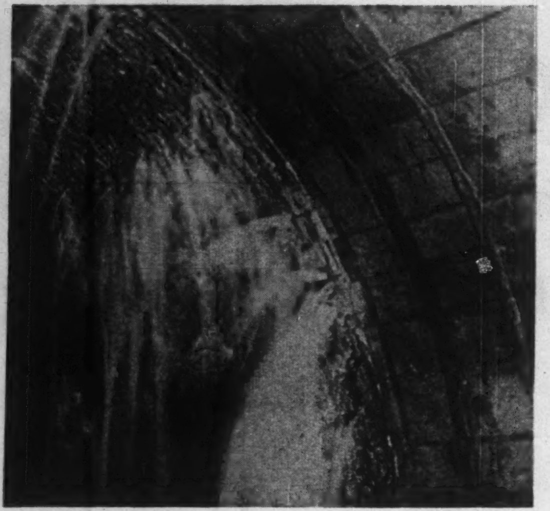
*Write for any of these catalogs describing* BAY CITY *Crawlers of ½ yards and up or* BAY CITY *CraneMobiles and CraneWagons in capacities to 25 tons.*

**BAY CITY**

**BAY CITY SHOVELS, INC. • BAY CITY, MICHIGAN** 247

**SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS**



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FAST . . . AND SIMPLY, TOO

Sika can seal leakage through any concrete structure against pressure. The Sika method is quick, sure and long-lasting.

Here is all you do.

1. Hack and clean surface.
2. Mix quick-setting Sika liquid and portland cement.
3. Use Sika No. 4A mortar for sealing seepage and diverting water to bleeder holes. (For air-placed mortar use Sigunit.)
4. Use Sika No. 2 mortar (sets in 20 seconds) to plug bleeders.
5. After sealing all leaks, apply a protective cement coat over entire surface.

For 30 years Sika compounds and methods have helped solve concrete and masonry problems ranging from the production of high quality concrete to the sealing of joints or cracks subject to severe movement and pressure.

Additional Sika compounds cover the following specific problems: TO SEAL LEAKS AGAINST PRESSURE, TO SEAL JOINTS OR CRACKS, TO REPAIR NON-LEAKING SURFACES, TO REPAIR STRUCTURAL EXTERIORS, TO PLACE GUNITE OR PRESSURE GROUT, TO PRODUCE HIGH QUALITY CONCRETE.

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Foundation Testing for Bridges,
Dams and other Heavy Structures

Manufacturers, also of Diamond Core Drilling Machines and complete accessory equipment, including all types of Diamond Drilling Bits. Ask for Bulletin 320.

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## OBITUARIES

**C. Langdon Cheves,** vice-president in charge of sales for Daniel Construction Co., Greenville, S. C., was killed in an automobile accident Jan. 3 near Anderson, S. C. He joined the construction company in 1936, after receiving his civil engineering degree from Clemson College. During World War II he served as colonel in the Corps of Engineers and as commanding officer on the Alcan Highway.

**Herman Fuhrman,** 72, former New York City building contractor and a founder of the firm Psatz & Fuhrman, Inc., died in St. Petersburg, Fla., Jan. 12. He had been treasurer of the firm from its inception in 1922 until retirement several years ago.

**Robert B. Patterson,** 62, chief construction engineer for the Utah State Road Commission, died Jan. 11. He joined the commission in 1919.

**Russell J. Liberty,** 59, senior civil engineer for the New York State Department of Public Works at the Barge Canal Terminal, died Jan. 17 in Rochester, N. Y. One of his most recent jobs was supervising Thruway construction in the Rochester area. He was a graduate of Rensselaer Polytechnic Institute.

**Harry M. Reid,** 69, former civil engineer with the Bureau of Reclamation, died Jan. 15 in Denver. His last Bureau assignment was with the Kansas River District. Earlier in his career he worked for the city of Denver and the Colorado Highway Department.

**Thomas W. Bollman,** 60, civil engineer who helped design numerous buildings in Toledo and Detroit, died Jan. 2 in Toledo. Since 1945 he was with Bellman, Gillett & Richards, Toledo architects. He formerly was associated with Porter W. McDonnell, Toledo consulting engineer, and Smith, Hinchman & Grylls, Detroit architects and engineers.

**Thomas M. Jordan,** civil engineer of Myrtle Beach, S. C., died in Conway, S. C., early in January. When Myrtle Beach was developed some 28 years ago he took an active part in the first engineering operations.

**John E. Foote,** 76, former city engineer of Utica and Little Falls, N. Y., died Jan. 5. Early in his career he served as an engineer on the Barge Canal construction. He retired from private practice in 1951.

# Rolling Steel Doors

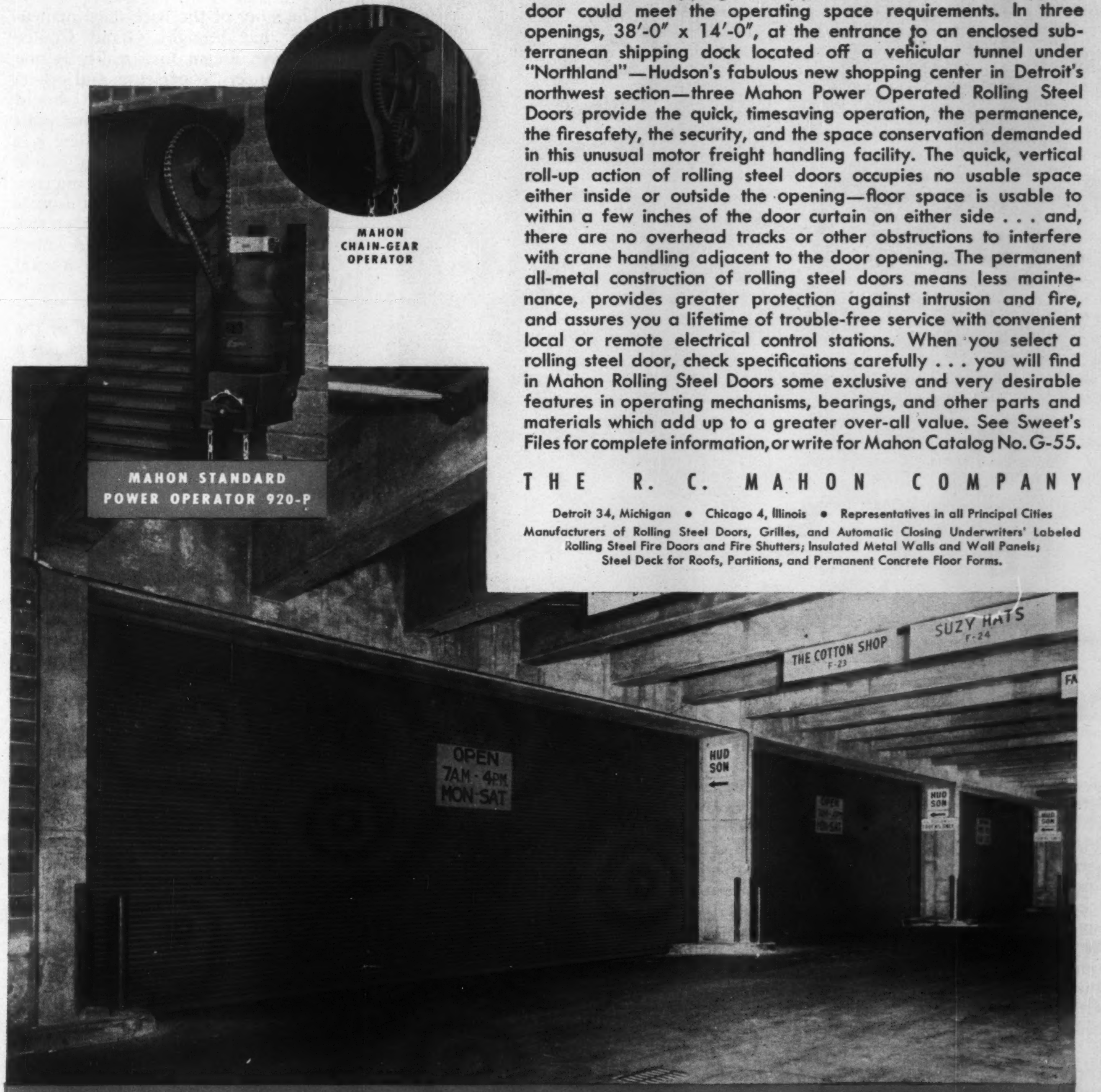
## *Manually, Mechanically, or Electrically Operated*

**Here is another shipping dock application in which no other type of door could meet the operating space requirements. In three openings, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock located off a vehicular tunnel under "Northland"—Hudson's fabulous new shopping center in Detroit's northwest section—three Mahon Power Operated Rolling Steel Doors provide the quick, timesaving operation, the permanence, the firesafety, the security, and the space conservation demanded in this unusual motor freight handling facility. The quick, vertical roll-up action of rolling steel doors occupies no usable space either inside or outside the opening—floor space is usable to within a few inches of the door curtain on either side . . . and, there are no overhead tracks or other obstructions to interfere with crane handling adjacent to the door opening. The permanent all-metal construction of rolling steel doors means less maintenance, provides greater protection against intrusion and fire, and assures you a lifetime of trouble-free service with convenient local or remote electrical control stations. When you select a rolling steel door, check specifications carefully . . . you will find in Mahon Rolling Steel Doors some exclusive and very desirable features in operating mechanisms, bearings, and other parts and materials which add up to a greater over-all value. See Sweet's Files for complete information, or write for Mahon Catalog No. G-55.**

**THE R. C. MAHON COMPANY**

**Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities**

**Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.**



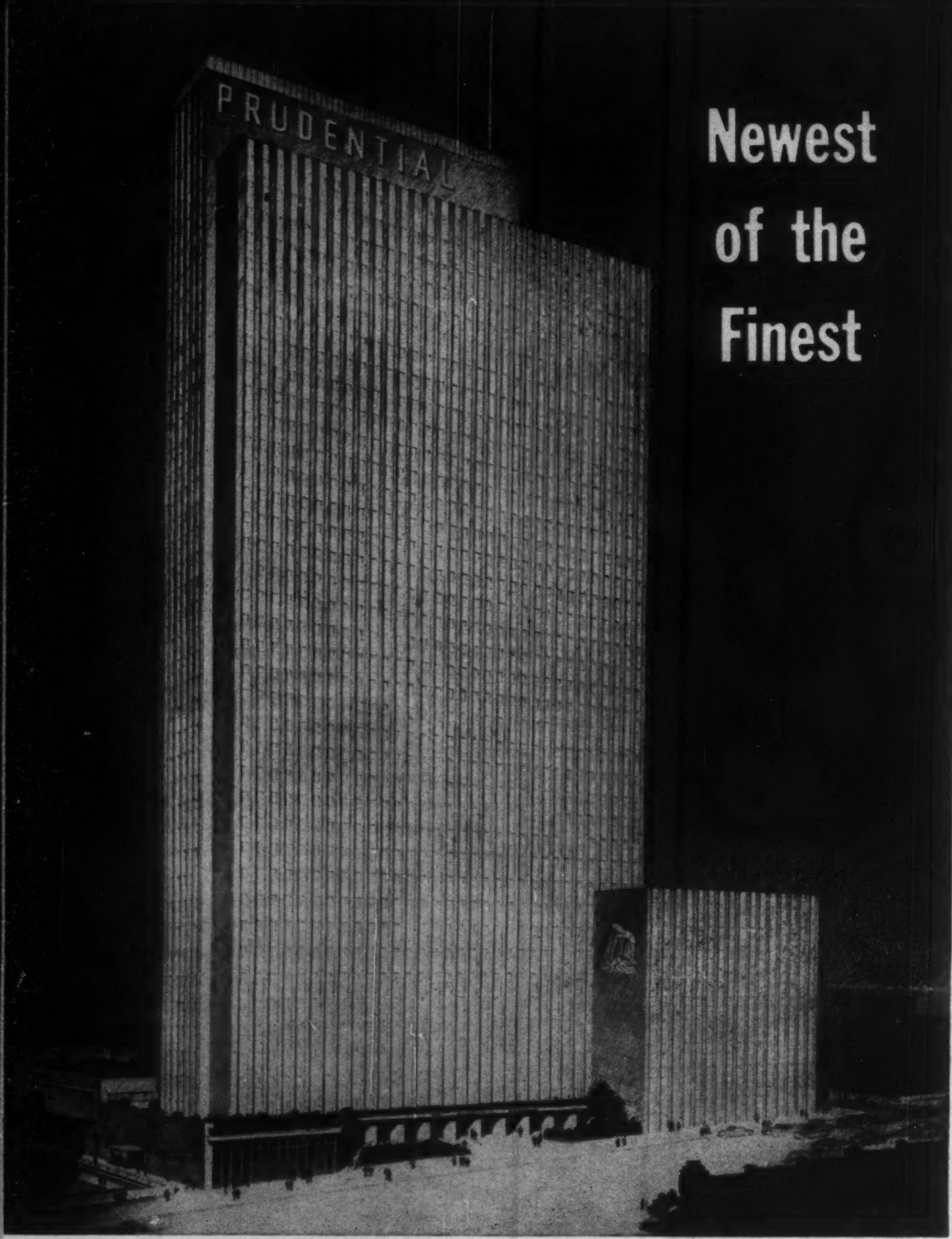
**MAHON CHAIN-GEAR OPERATOR**

**MAHON STANDARD POWER OPERATOR 920-P**

**ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT**

**Three Mahon Power Operated Rolling Steel Doors, 38′-0″ x 14′-0″, at the entrance to an enclosed subterranean shipping dock off a vehicular tunnel under "Northland"—The J. L. Hudson Company's new shopping center, Detroit. Victor Gruen & Associates, Architects. Bryant & Detwiler, General Contractors.**

# MAHON



*Prudential Building, Chicago • Naess & Murphy, Architects • Geo. A. Fuller Co., Contractors*

**The new Prudential Building will soon rise 600 feet above the shore of Lake Michigan, and become a distinguished addition to Chicago's skyline. This mid-America headquarters of the Prudential Insurance Company will contain more space than any other building used exclusively for offices in Chicago.**

**As a building, it will take its place among our country's finest structures and is a perfect example of the features a well-informed investor is willing to put into the space he plans to use and rent. For instance, to prevent future obsolescence and to meet the increasing requirements of modern electronic office equipment, architects Naess & Murphy have prepared the new Prudential Building to handle the highest electrical load of any office building yet built. To do this job easily, and to permit layout changes and additions at minimum cost, Robertson Q-Floor construction is being used. This strong, light-weight, steel, cellular structural floor is the only construction material available which provides easy electrical access over every 6-inch area of the entire exposed floor. For more good reasons why fine new buildings all over America have turned to Robertson Q-Floor construction, see the opposite page.**

**Robertson**

**Q-Floor**

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# BOOKS

## Dam Politics

Hail Columbia — The Thirty-Year Struggle for Grand Coulee Dam—By George Sundborg. 467 pp. The Macmillan Co., 60 Fifth Ave., New York 11, N. Y. $5.75.

The story of the back-stage maneuvering that brought Grand Coulee Dam from dream to a reality is one that engineers, contractors and others in the construction industry should know about. The lesson that this book makes evident is that there is a lot more to building a dam beside drawing plans and pouring concrete. The sociological and political aspects are, in many cases, just as important.

The book is written around James O'Sullivan who worked for Grand Coulee Dam almost continuously from the early 1920's until his death in 1949. O'Sullivan Dam, one of the major features of the Columbia Basin Irrigation Project, is named after him. O'Sullivan, a lawyer and contractor, worked as executive secretary of volunteer leagues and state commissions in promoting the work. The story relates his contacts with Presidents, Secretaries of the Interior, Governors, Congressmen and Congresses, and hundreds of others in bringing the dam and irrigation work to reality.

The unfortunate part about the book is that its author does not write in an impartial vein. That makes the book difficult reading. But, even so, the effort is rewarding.

## New Engineering Books

Simplified Site Engineering for Architects and Builders — By Harry Parker and John W. MacGuire. 250 pp. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. $5.00.

Simplified Roof Framing—By J. Douglas Wilson and S. O. Werner. Second Edition. 160 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $3.25.

Realistic Depreciation Policy — By George Terborgh. 197 pp. Machinery & Allied Products Institute, 120 South Lasalle St., Chicago 3, Ill. $6.00.

What Every Engineer Should Know About Rubber—By W. J. S. Haunton. 178 pp. The British Rubber Development Board, London. Available from the Natural Rubber Bureau, 1631 K. St., Washington 6, D. C. 178 pp. $0.50.

Analog Methods in Computation and Simulation—By Walter W. Soroka. 390 pp. McGraw-Hill Book Co., 330

West 42nd St., New York 36, N. Y. $7.50.

NORWEGIAN-ENGLISH TECHNICAL DICTIONARY—By John Ansteinsson. 327 pp. Kraus Periodicals, 16 East 46th St., New York 17, N. Y. $7.75.

BASIC CONCEPTS IN VOCATIONAL GUIDANCE—By Herbert Sanderson. 338 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $4.50.

## Reports and Pamphlets

TENTATIVE SPECIFICATIONS FOR READY-MIXED CONCRETE (C94-54T)—National Ready Mixed Concrete Association, 1325 E St., N. W., Washington, D. C.

PRODUCTION OF SAND AND GRAVEL—Circular No. 57—National Sand and Gravel Association, 1325 E St., N. W., Washington 4, D. C.

NOTES ON RAILROAD LOCATION AND CONSTRUCTION PROCEDURES from The School of Experience—By J. A. Given. American Railway Engineering Association, 59 E. Van Buren St., Chicago 5, Ill. $0.50

PROCEEDINGS OF THE 40TH ANNUAL ROAD SCHOOL—Purdue University, Engineering Extension Department, Extension Series No. 86, Purdue University, Lafayette, Ind.

CURRENT CONCEPTIONS ON AIR POLLUTION—Industrial Hygiene Foundation of America, Inc., 4400 Fifth Ave., Pittsburgh 13, Pa.

PROCEEDINGS OF THE THIRD ANNUAL OHIO WATER CLINIC, 1954—Engineering Experiment Station Report, Ohio State University, Columbus, Ohio. $1.00

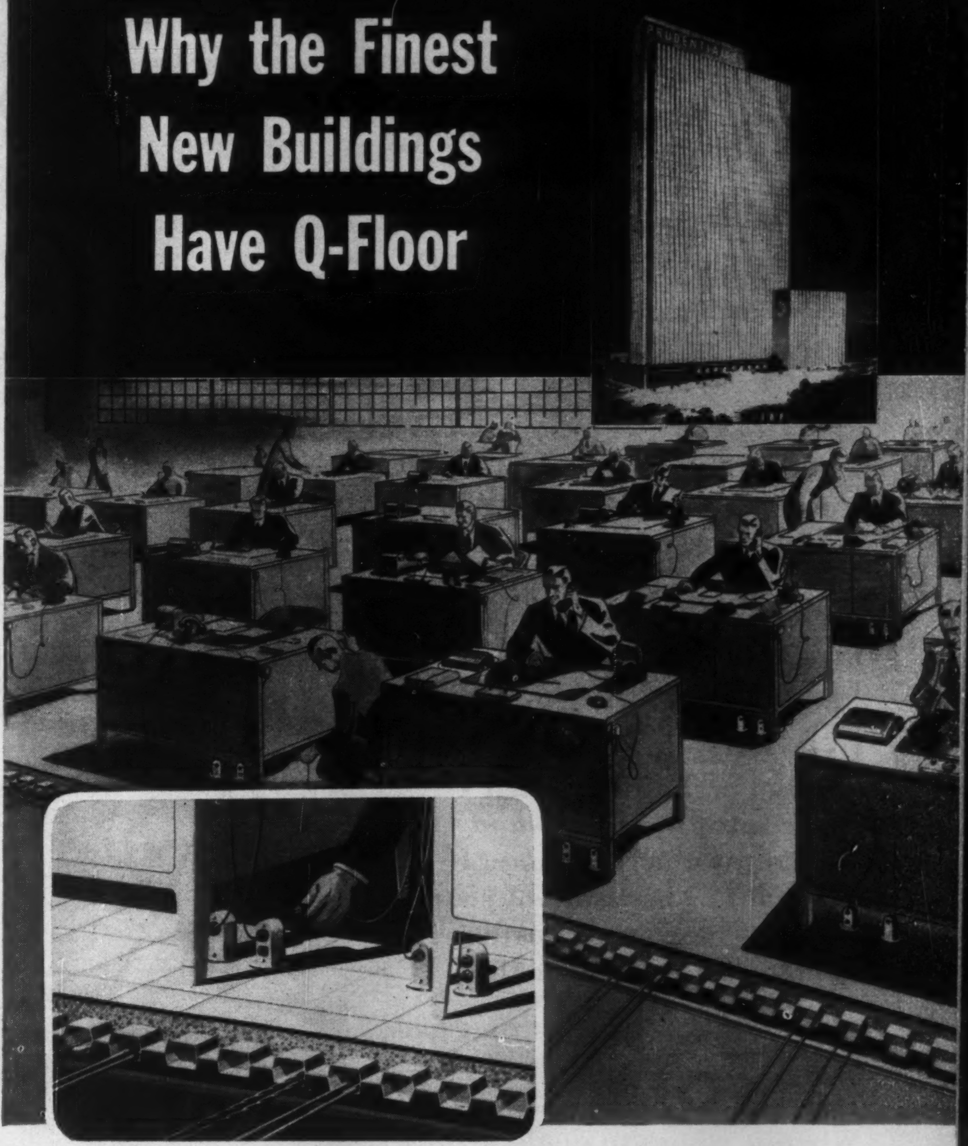
SYMPOSIUM ON DYNAMIC TESTING OF SOILS—ASTM Special Technical Publication No. 156, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.50

PUBLICATIONS—14th Volume, International Association for Bridge and Structural Engineering, Published by the General Secretariat in Zurich, Switzerland.

PROCEEDINGS—1954—National Council of State Boards of Engineering Examiners, P. O. Drawer 1404, Columbia, South Carolina, $2.00

CONSTRUCTION AND MAINTENANCE OF ROADS OVER PEAT—Technical Memorandum No. 29, National Research Council of Canada, Ottawa, Ont.

PROCEEDINGS, The Sixth Pacific Northwest Industrial Waste Conference—Dept. of Civil Engineering, University of Washington, Seattle, Wash.



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Have Q-Floor

Beyond the fact that Q-Floor offers the greatest electrical availability of any structural floor in existence (as indicated in the above illustration), there are several other vital reasons why it has become a part of the finest new buildings in America.

Q-Floor saves construction time and money. The steel cellular units come on the job cut to fit so that two men can lay 50 square feet in one minute. In the case of the U. S. Steel-Mellon Bank Building in Pittsburgh, forty floors were installed in four months. Because Q-Floor provides a perfect platform for work and storage, 1,000 men were able to operate on the job without interfering with each other. Q-Floor saves steel as a result of its favorable ratio of weight to strength. Footings and structural steel can be lighter than with ordinary construction. Moreover, Q-Floor saves drafting room time since completely predetermined wiring and mechanical layouts are not necessary. Because no combustible forms and shoring are required, there has never been a construction fire on a Q-Floor job. Add these features to low cost on wiring changes in the years to come, and it's easy to see why Q-Floors are a feature of America's finest new buildings.

The Robertson Technical Library contains data books on Q-Floor which should be part of every architectural and engineering library. Write to us.

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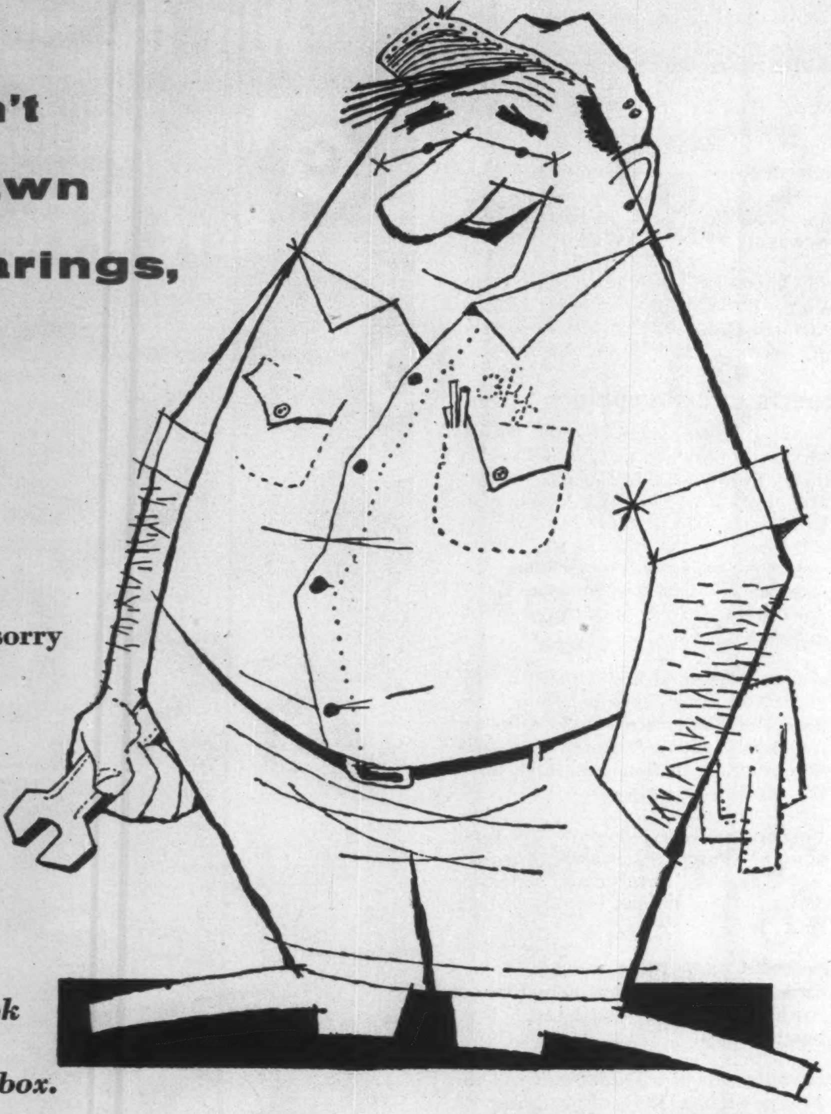
# you can't talk brawn into bearings, boys!



**HY SAYS:** Take it from an old-timer—a bearing's either *got* it, or it ain't. I fell for one o' those slick sales talks for off-beat bearings once myself—but *just once.* Was I sorry I hadn't used Hyatts!

Hyatts were so good they were original equipment when I broke into this game—*and they're even better today!* If you want to be proud of your work and keep your customers happy, just remember this:

There's other bearings that *look* as good, but you *hold out for Hyatts in the blue and yellow box.* When it comes to *quality,*

**meet HY WHEELER, the sage of the socket wrench!**

He may have been tinkering with engines before you were engineering with TinkerToys, and he may be quaint, but he's a good man to know. He'll be here regularly from now on to give you a chuckle and some helpful hints. Watch for him!

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# CONSTRUCTION REPORTS

## Bids Asked—Low Bidders—Contracts Awarded—First Section—

*Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager*
*J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.*
*J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.*

## NEW ENGLAND

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

**Campanella & Cardi Constr. Co.**, 780 Jefferson Blvd., Warwick, R. I. LB **$713,715**, est. $750,000. hy. and bridge Mid Cape Hy., S 101 (1), F 328 (4), Dennis;

**Hill Constr. Co.**, Providence St., Millbury, Mass. LB **$478,268**, est. $570,000. hy. reconstr. Boston Rd. Rte. 67, S 215 (7), Palmer. Bids Jan. 18. CD 1/5.

**MASSACHUSETTS** — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

**E. T. O'Neil & Son Constr. Corp.**, 9 Elmwood Ave., Holyoke, Mass. CA **$861,818**, est. $1,050,000. hy. and bridge, Chicopee. CD 1/7, under LB.

▲ **MASSACHUSETTS** — Massachusetts Turnpike Auth., 80 Boylston St., Boston,

**Gilbane Building Co.**, 90 Calverly St., Providence, R. I. LB **$6,294,657**. Contr. 51-080 hy. and bridge constr., Grafton, Dupont, Westboro and Hopkinton. Bids Jan. 20. CD 1/4.

▲ **RHODE ISLAND** — State of R. I. and Providence Plantations, F. A. Adams, purch. agt., State House, Providence,

**M. A. Gammino Constr. Co.**, 728 Valley St., Providence, R. I. CA **$2,207,535**, est. $2,300,000. constr. Contr. No. 1, North-South Freeway, Providence River Bridge, No. 500, Contr. No. 5455, FAP UI-I-03. Providence. Bids Dec. 22. CD 12/29, under LB.

**V. F. Capaldi Constr. Co.**, 63 Observatory Ave. N., Providence, R. I., CA **$804,000**. lateral sewers, portion of sewerage sys., Contr. 3-L, EAST PROVIDENCE, R. I. Town, Bd. Sewer Comrs., Town Hall, East Providence, R. I. Bids Dec. 7. CD 12/1.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

**Torrington Bldg. Co.**, 187 Church St., Torrington, Conn., CA **$591,053**, est. $625,000. Junior-Senior High SCHOOL, Sheffield St., OLD SAYBROOK, CONN. Town, Thomas Curran, chn. School Bldg. Comn., Old Savbrook Conn. Bids Jan. 14. CD 1/21, under LB.

## MIDDLE ATLANTIC

#### BIDS ASKED—HEAVY CONSTRUCTION

**New York — UNLOADING FACILITIES — BA 3/1 — At Office of Chief Engineer of The Port of New York Auth., 111 8th Ave., New York, Zone 11, Contr. LT—160.033, altering freight shed, const temporary and permanent cattle unloading facilities, demolition of Pier 78, foot of W. 38th St. Plans deposit $30. CD 1/18.**

#### BIDS ASKED—BUILDINGS

**New Jersey, Bordentown**—SCHOOL—BA 3/29—City Bd. Educ., Crosswicks St., general construction 2 story elementary school, Crosswicks St., $800,000. Plans deposit $10. Micklewright & Mountford, 72 Ewing St., Trenton, archts. CD 11/23.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ **Tecon-Grafe-Callahan**, 1201 Main St., Dallas, Tex. CA **$4,098,064**, for delivery of crushed rock and manufactured sand by rail to classification yard adjacent to the proj., near Massena, St. Lawrence Co. Spec. PA—5-11013, St. Lawrence Contr. No. P4, NEW YORK. The Power Authority of The State of New York, 270 Broadway, New York 7, N. Y. Bids Jan. 5. CD 1/20, under LB.

▲ **NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

**Fehlhaber Corp.**, 217 E. 44 St., New York, N. Y., LB **$2,493,445**, substructures for East Viaduct of the Newark Bay-Hudson County extension of N. J. Turnpike from Communipaw Ave. to Grand St. Contract 21, Jersey City, Hudson Co. Bids Jan. 11. CD 1/17, under LB.

▲ **NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

**Harris Structural Steel Co.**, 419 Fourth Ave., New York 10, N. Y. CA **$769,845**, Contract N-20, superstructure steel for Bayview Viaduct extending from Caven Point Rd. Interchange to Bayview Ave. in Jersey City in connection with constr. of Newark Bay-Hudson Co. Extension of New Jersey Turnpike, Hudson Co. Bids Jan 6. CD 1/10, under LB.

▲ **Mattro & Stablow**, Beaver, Pa., LB **$279,721**. Contr. 1, Part A, intercepting sewers, sewage regulators, force mains, siphons and appurtenances, Upper Monongahela River Interceptor, sewage regulators and appurtenances;

**Frank Manella Constr. Co.**, 7003 Chaucer St., Pittsburgh, Pa., LB **$1,020,031**, Contr. No. 1, Part B, constr. Lower Monongahela River interceptor, sewage regulators, force mains, siphon and appurtenances;

**Leo Butler Co.**, 9217 51st Ave., College Park, Md., LB **$999,380**, Contr. No. 1, Part C, constr. Youghiogheny River Interceptor, sewage regulators, force mains, siphon and appurtenances;

**Thompson-Starrett Co.**, 1315 Henry W. Oliver Bldg., Pittsburgh 22, Pa., LB **$1,577,975**, Contr. No. 2, general constr. sewage treatment plant, outfall sewer, roads, pumping stations and appurtenances;

**Devlin Electric Constr. Co.**, Bessemer Bldg., Pittsburgh 22, Pa., LB **$144,136**, Contr. No. 5, electrical work for sewage treatment plant and pumping stations, McKEESPORT, PA. Municipal Auth. of City of McKeesport, 520 Walnut St., McKeesport, Pa. Bids Jan. 18. CD 12/21, under LB.

▲ **MARYLAND**—State Rds. Comm., 108 E. Lexington St., Baltimore, Zone 2,

**James Julian, Inc.**, 405 S. Dupont Rd., Elsmere, Del. LB **$934,403**. surf. 3.75 mi. dual hy., State Rte. 113, near Berlin, Contr. WO 332-4-120, Worcester Co.;

**A. H. Smith**, Branchville, Md. LB **$98,274**. surf. 0.431 mi. dual hy. U. S. 50, Parole, Contr. AA 263-27-515, Anne Arundel Co. Bids Jan. 18. CD 1/3.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

**Shore Haven Apartment No. 4, Inc.**, 89-31 16 St., Jamaica, N. Y. Owner Builds. **$576,000** 6 story APARTMENT, 1429-61 Shore Parkway, BROOKLYN, N. Y. CD 11/22.

▲ **Broadlawn Estates**, c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$2,000,000**. 105 HOUSES, tract on Bellmore Ave., east of Prospect Ave., EAST MEADOW, N. Y.

▲ **Green Tree Manor Homes**, c/o John J. Braglia, 1601 Hempstead Turnpike, Elmont, N. Y. Owner Builds. **$1,000,000**. 80 HOUSES, 16-acre tract, Boundary Ave., east of Hicksville Rd., NORTH MASSAPEQUA, N. Y.

▲ **Green Valley Estates**, c/o Butterly & Green Realty Co., 168-25 Hillside Ave., Jamaica, N. Y. Owner Builds. **$2,500,000**. 175 HOUSES, Woodbury Rd., east of South Oyster Bay Rd., PLAINVIEW, N. Y.

**John McShain Inc.**, 1501 N. Arlington Ridge Rd., Arlington, Va., CA **$898,200**, COLLEGE, addns, alterations, WASH. D. C., St. Pauls College, 7 and Hamlin Sts. N.E., Wash. D. C. Awarded Jan. 13. CD 12/30, under LB.

**Victor Beauchamp Inc.**, 6837 4 St. N.W., Wash., D. C., LB **$864,468**, girls' HIGH SCHOOL, Academy of Jesus and Mary, Rigg Rd. and Metzerott Rd. N.E., Wash. D. C. Order of Jesus and Mary, Highland Mills, N. Y Bids Jan. 18. CD 12/23.

### *PROJECTS COVERED*

#### *By Size*

**Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.**

#### *By Regions & Classes of Construction*

**(In order of Listing)**

**BIDS ASKED**
**LOW BIDDERS**
**CONTRACTS AWARDED**

**New England**
**Middle Atlantic**
**South**
**Middle West**
**West of Mississippi**
**Far West**

**PROPOSED WORK**
**Water Supply**
**Sewers, Waste Disposal**
**Bridges**
**Streets & Roads**
**Earthwork, Waterways**
**Public Buildings**
**Mass Housing**
**Commercial Buildings**
**Industrial Buildings**
**Unclassified**

#### *In These Stages*

**PROPOSED WORK: Before and including appointment of engineers or architects.**

**BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.**

**LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.**

**CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.**

**CD dates shown are of Construction Daily issue in which last previous report was published.**

#### *Symbols and Abbreviations Include:*

| | |
|---|---|
| **▲** | **Federal Government** |
| **ENR** | **Project of $1,000,000 or over.** |
| **CD** | **Engineering News-Record** |
| **†** | **Construction Daily** |

**For additional reports see Construction Daily.**

## SOUTH

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

† **VIRGINIA**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington,

**A. B. Burton Co.**, Lynchburg, Va., LB **$824,068**, grading, five bridges, base course etc. from Otter Creek, Bridge No. 2, to James River, Blue Ridge Parkway, Proj. No. 1G3, Amherst Co. Bids Jan. 21. CD 12/29.

▲† **T. A. Loving & Co.**, Bank of Wayne Bldg., Goldsboro, N. C., LB **$2,116,242**, dormitories, mess and utilities. Seymour-Johnson Air Force Base, ENG-31-075-55-31, GOLDSBORO, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. **(Correction—price).** Bids Jan. 13. C 1/20, under LB.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

**Sam A. Sloane Constr. Co.**, Riverland Terrace, Charleston, S. C., LB **$794,422**, NURSES HOME, CHARLESTON, S. C. Medical College of South Carolina, 1 Lucas St., Charleston, S. C. Bids Jan. 19. CD 12/21.

**Delta Constr. Co. & Paul H. Kessling**, 1049 Albany Ave., Waycross, Ga. CA, **$697,800** Waycross SCHOOLS addns., WAYCROSS, GA. State School Bldg. Auth., Kemper Bldg., 41 Exchange Pl. S.E., Atlanta, Ga. Bids Jan. 20. CD 12/3.

▲† **Associated Contractors**, Birmingham, Ala., (composed of Dunn Constr. Co., 2508 3 Ave. N., Birmingham, Blount Bros. Constr. Co., Bell Bldg., Montgomery, Patterson-Emerson-Comstock Co. of Alabama, Brown-Marx Bldg., Birmingham and Girdler Co., 244 E. Broadway, Louisville, Ky.) **are negotiating for construction of Alabama Ordnance Works on cost-plus-fixed-fee contract.** Estimated cost is **$46,000,000**, CHILDERSBURG, ALA. with Dpt. of Army, Ordnance Depot, Pentagon Bldg., Wash., D. C. CD 1/21.

**Barksdale & LeBlanc**, Box 1567, Baton Rouge, La. CA **$597,919**. OFFICE, BATON ROUGE, LA. Gulf States Utilities Co., 340 Florida St., Baton Rouge, La. CD 1/5, under LB.

## MIDDLE WEST

#### BIDS ASKED—BUILDINGS

**Ill., Berwyn—SCHOOLS—BA 2/9—School District 100, 6539 W. 26 St., addns. to 8 schools. $800,000. Ganster & Henninghausen, 222 Washington St., Waukegan, archts.**

▲ **Ill., Aurora—SCHOOLS—BA 3/1—School District 121, 56 Jackson St., East High School, 5 and Smith Sts., $4,250,000; grade school, 7 and Gates Sts., $500,000. Perkins & Will, 309 W. Jackson Blvd., Chicago, Zone 6, archts. CD 12/4/52.**

#### SOON LETS CONTRACT—BUILDINGS

**Ill., Chicago**—SCHOOL, etc.—Sisters of St. Francis, 3901 Ridge Ave., soon lets contract high school and convent, Lawndale and Byron Sts. $950,000. Gaul & Voosen, 228 E. Superior, Zone 11, archts. CD 12/23.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲† **W. L. Johnson Constr. Co.**, Box 175, Bexley Station, Columbus 9, O., LB **$3,104,537-$3,117,886**, runway extens. by 1,400 ft. and expansion of apron paving by 350,000 sq. yds., Lockbourne Air Force Base. COLUMBUS, O. U. S. Eng., 237 Fourth Ave. Huntington 18, W. Va. Bids Jan. 20. CD 12/28.

▲ **E. A. Box Constr. Co. & E. R. Knapp & Son Constr. Co.**, Box 836, Fort Wayne, Ind., LB **$1,412,823**, Sect. A, intercepting sewers;

**C. Ray Sikes & Assocs. and Don King Constr. Co.**, 209 S. 3 St., Columbus, O., LB **$729,114**, Sect. B, pumping station, sewage treatment plant, DEFIANCE, O. City, Defiance, O. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, O., engrs. Bids Jan. 11. CD 11/14/51.

**Kenny Constr. Co.**, 3220 Oakton St., Skokie, Ill., CA **$652,468**, grade separation Congress Expressway under C. & W. I. R. R., CHICAGO, ILL. Cook Co. County Bldg., Chicago, Ill. Bids Dec. 28, awarded Jan. 18. CD 1/6, under LB.

**Northern States Co.**, 30 N. La Salle St., Chicago 2, Ill. CA **$533,095**, lower level paving Wacker Dr. and Michigan Ave. from Alden to Grand Ave., CHICAGO, ILL. City, City Hall, Chicago, Ill. Awarded Jan. 14. CD 4/26/45.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

**Loselle Constr. Co.**, 1555 Goddard St., Wyandotte, Mich. LB **$1,126,612**, est. $1,180,000. 24 ft. dual c. conc. Detroit-Toledo Expressway Raisin River north to Bahl Rd., IN 58-57 C14-U (IN 424 11), MM 58-22 C11-R, BM 58-57 C15-R, Monroe Co.;

**Carl Goodwin & Sons**, Allegan, Mich. LB **$623,994**, est. $660,000. c. conc. relocation US-127, F 46-3 C8-R, F 30-31 C2-R, F 38-7 C5-R (F 167 6), Lenawee, Hillside and Jackson Counties;

**Nagelkirk & Ranta**, 2550 Chicago Dr. S.W., Grand Rapids, Mich. LB **$246,803**, est. $300,000. stabilized aggregate surf. M-79, also 8x16 ft. concrete culvert, SS 23-36 C4-U (F 431 1), F 23-36 C3-R (S 786 1), SS 23-36 C5-R, Eaton Co.;

**L. W. Edison Co.**, 924 Floral Dr. S.W., Grand Rapids, Mich. LB **$387,040**, est. $390,000. c. conc. 3.551 mi. M-60 Fabius east to US-131, F 78-33 C4-R (F 232 10), St. Joseph Co.;

**Hertel-Deyo Co.**, 5205 Division St. S., Grand Rapids, Mich. LB **$376,429**, est. $380,000. c. conc. 4,495 mi. M-21 east and west, F 77-68 C5-U, F 77-68 C6-R (F 65 2), St. Clair Co.; LB **$90,795**, est. $110,000. 24 ft. aggregate surf. M-66, SS 5-21 C4-R, SS 15-15 C5-R, SS 15-15 C6-U (S 324 7), Antrim and Charlevois Counties;

**Hertel-Deyo Co. & C. E. Uterbach**, 5205 Division St. S., Grand Rapids, Mich. LB **$409,614**, est. $430,000. c. conc. 24 ft. wide, 5.008 mi. US-27 southerly from Grayling, F 20-13 C6-R (1-171 12), F 20-13 C7-R, Crawford Co.;

**Sugden & Sivier, Inc.**, 13100 Oak Park St., Detroit, Mich. and **Julius Porath & Son**, 702 Transportation Bldg., Detroit, Mich. LB **$276,155**, est. $290,000. b. conc. surf. 0.123 mi., light and power facilities St. Aubing Crossing on Edsel Ford Expressway, UI 82-197 C1-U (UI 391 78), Wayne Co. Bids Jan. 19. CD 1/6 and 1/11.

## BUILDINGS

### LOW BIDS AND CONTRACTS

▲ **Joseph Stoller**, 2442 Ferguson Rd., Cincinnati, O. Owner Builds. **$1,080,000**, sixty 1½ story, bsmnt., brick HOMES, Anderson Ferry Rd., south of Cleves-Warsaw Park, CINCINNATI, O. Leslie Moss, 1210 Drott Ave., Cincinnati, O., archt. Thomas Graham, 1715 Madison Ave., Cincinnati, O., engr. Awarded Jan. 18.

▲ **Edward J. DeBartolo Constr. Co.**, 2620 Market St., Youngstown, O. CA **$2,500,000**. 140,000 sq. ft. SHOPPING CENTER, St. Rte. 4, south of city, parking for 2,000 cars, HAMILTON, O. Hamilton Plaza Shopping Center, Inc., c/o builder.

▲ **Edward J. DeBartolo Constr. Co.**, 2620 Market St., Youngstown, O., CA **$2,500,000**. 140,000 sq. ft. SHOPPING CENTER, parking for 1,700 cars, Selma Rd. and Sunset Blvd., SPRINGFIELD, O. Southern Village Shopping Center, c/o builder. CD 10/4, under Edward J. DeBartolo & Assocs. as owners.

▲ **R. G. Dunbar, Inc.**, 3810 Upton Ave., Toledo, O. Owner Builds. **$6,000,000**. 360 HOMES, 97-acre site north of Sylvania Ave., east of Secor Rd. to be known as Elmhurst Park, incl. 2.9 mi. paved streets, TOLEDO, O. CD 1/17.

▲ **F. Thyer & Sons**, 2838 Wayne Ave., Toledo, O. Owner Builds. **$5,000,000**. 330 HOMES, 80-acre tract Laskey Rd. between Douglas and Secor Rds., known as Thyer View subdivision, TOLEDO, O. CD 1/17.

**Carlson-Reid Builders**, Box 330, East Chicago, Ind. CA, **$741,436**, Lafayette Elementary SCHOOL, HAMMOND, IND. School City of Hammond, 5935 Hohman Ave., Hammond, Ind. Bids Jan. 6, awarded Jan. 18. CD 1/18, under LB.

▲ **K. H. Kettelhut**, Lafayette, Ind., CA **$2,074,800 (1)** RECREATIONAL GYMNASIUM, LAFAYETTE, IND. Bd. Trustees, Purdue University, Lafayette, Ind. Bids Jan. 19. CD 12/29.

▲† **J. D. Hedin Constr. Co.**, 820 Michigan Ave. N.E., Wash., D. C., CA **$1,989,000** 170-bed NEUROPSYCHIATRIC ADMISSIONS and TREATMENT BLDG., Veterans Administration Hospital, MARION, IND. Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C. Bids Dec. 21, awarded Jan. 11. CD 12/27, under LB.

▲ **Barton-Malow Co.**, 2631 Woodward St., Detroit, Mich. CA **$2,151,163**, general contract;

**Distel Heating Co.**, 730 E. Shiawassee St., Lansing, Mich. CA **$740,000**. mechanical contract for HIGH SCHOOL, MIDLAND, MICH. City, Bd. Educ., Midland, Mich. CD 1/5, under LB.

# WEST OF MISSISSIPPI

### BIDS ASKED—HEAVY CONSTRUCTION

▲ **Kan., Lawrence**—BA 2/15—City, sewage plant, $1,000,000, Black & Veatch, 4706 Broadway, Kansas City, Mo., engrs. CD 9/29/53.

### BIDS ASKED—BUILDINGS

▲ **Tex., Dallas**—SCHOOL—BA 2/22—Dallas Independent School Dist., 3700 Ross St., Oliver Wendell Homes Junior High School in Cedar Crest Area. $1,250,000. Plans deposit $25. Smith & Mills, Mercantile Bank Bldg. and Mark Lemmon, 1210½ Main St., archts. CD 11/16/53.

## HEAVY CONSTRUCTION

### LOW BIDS AND CONTRACTS

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn. Own Forces. **$500,000**, furnish materials, install 20 in. high pressure gas main from North St. Paul to Rice St. in St. Paul, North St. Paul; **$182,000**, 12 in. high pressure gas main from North St. Paul to Border Station, North St. Paul; **$200,000**, install addnl. gas mains and replacement of present mains, Red Wing; **$3,000,000**, gas mains and other distr. facilities, St. Paul; **$435,000**, gas reinforcements in St. Paul Metropolitan District, St. Paul; **$1,200,000**, gas mains, Stillwater, MINNESOTA. Grand total $5,517,000.

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn. Own Forces. **$224,000**. 115,000 volt transmission line and other facilities, Granite Falls; **$1,330,000**, building 161,000 volt transmission line from Mankato to Winnebago interconnecting with interstate Power Co., Mankato; **$2,518,000**, building 115,000 volt transmission line from Mankato to Granite Falls with sub-stations, Mankato; **$1,600,000**, furnish, install 115,000 volt transmission line from Black Dog Plant south of Minneapolis to Chaska and Young America about 30 mi., Minneapolis; **$500,000**, sub-stations for Pine Bend area (Dakota County) imprvs. to transmission lines and switching station in that area and line from Pine Bend to Hastings, Minneapolis; **$95,000**, rebuilding Franklin-Winthrop transmission line, Minneapolis; **$143,000**, rebuilding, increasing capacity of Montreal electric sub-station, St. Paul; **$300,000**, 69,000 volt line from Dassel to Atwater, St. Cloud; **$425,000**, new 69,000 volt line from Crow River to Buffalo with sub-stations and other facilities, St. Cloud; **$800,000**, increasing sub-station capacities, Stillwater; **$340,000**, sub-station, Young America, MINNESOTA. Grand total $8,275,000.

**Own Forces and L. E. Meyers Co.**, 53 W. Jackson Blvd., Chicago 4, Ill. CA Est. **$640,000**. constr., rebuilding 75 mi. primary lines in St. Louis area, MISSOURI. Union Electric Co. of Missouri, 315 N. 12 Blvd., St. Louis 1, Mo. CD 1/10/55.

▲† **Peter Kiewit Sons Co.**, Southeast Station, Wichita 17, Kan. CA **$1,711,658**. airfield pavement Sec. 1, Smoky Hill Air Force Base, Inv. 23-028-55-40, SALINA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Jan. 14. CD 1/5.

† **Star Industries Co.**, 610 N. Main St., Wichita, Kan. CA **$624,639**. group N Bldgs., incl. service club, post exchange, theater, McConnell Air Force Base, Inv. 23-028-55-39, WITCHITA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Jan. 14. CD 12/30.

▲ **TEXAS**—State Hy. Comn., Austin,

**Austin Bridge Co.**, P. O. 1590, Dallas, Tex., LB **$511,264**, grading, base, structures, asph. pavement and P.S.F. R.R. overpass 1.59 mi. Hy. US 87, Proj. U 546 (22), etc., Lubbock Co.;

**J. O. Boswell**, 311 Paris Ave., Lubbock, Tex., LB **$73,540**, wid'n base and surf. 19.809 mi. Hy. FM 285, Proj. C789-1-3, etc., Randall and Armstrong Counties;

**W. R. Boyd, Inc.**, P.O. Box 408, Center, Tex., LB **$74,782** grading, structures, base, surf. 3.526 mi. Hy. FM 944, Proj. R 694-2-4, Sabine Co.;

**D. H. Buchanan Constr. Co.**, 1318 N. 5 St., Temple, Tex. LB **$160,497**, grading, structures, base, surf. 13.066 mi. Hy. FM 1236, Proj. S 1933 (1), William-

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son Co.; LB **$80,146,** grading, structures, base, surf. 8.405 mi. Hy FM 1623, Proj. S 1686 (2), Blanco Co.;

**Cage Bros.,** 6959 San Pedro St., San Antonio, Tex., LB **$646,208,** flexible base, hot mix b. conc. 19.496 mi. Hy. US 80, Proj. IN 558 (15), Culverson and Jeff Davis Counties; LB **$300,044,** flexible base, b. conc. 7.352 mi. Hy. US 81, Proj. C 15-9-13, Williamson Co.; LB **$459,403,** flexible base, b. conc, 20.797 mi. Hy. US 82 and 180, Proj. S 149 (8), Hudspeth Co.; LB **$191,471,** wid'n, flexible base, c. conc. pavement, b. conc. pavement 2.844 mi. Hy. US 87, Proj. F 508 (5), Victoria Co.;

**J. R. Canion,** P. O. Box 756, Austin, Tex., LB **$225,227,** flexible base, b. conc. 9.013 mi. Hy. SH 71, Proj. F 319 (5), Fayette and Bastrop Counties;

**Gilvin-Terrell, Inc.,** Amarillo, Tex., LB **$379,674.** flexible base, b. conc. 9.327 mi. Hy. US 80, Proj. IN 525 (4), Mitchell Co.;

**E. W. Hable & Sons,** P. O. Drawer 650, Corsicana, Tex. LB **$81,262,** grading, structures, base, surf. 5.221 mi. Hy. FM 1004, Proj. R 947-3-4, Jasper Co.;

**Fred Hall & Son,** Valley Mills, Tex., LB **$81,791,** grading, structure, base, surf. 6.546 mi. Hy. FM 1807, Proj. C 1600-2-2, Johnson Co.;

**O. W. Howard & J. C. McLaughlin,** Madisonville, Tex., LB **$107,506,** grading, structures, base, surf. 6.394 mi. Hy. FM 1791, Proj. S 1766 (2), Walker Co.;

**George Kies,** P. O. Box 5187, Austin, Tex., LB **$133,379,** grading, structures, base, surf. 7.156 mi. Hy. FM 1693, and 2144, Proj. C 1689-1-2, etc., Colorado Co.;

**Holland Page,** P. O. Box 1181, Austin, Tex., LB **$84,809,** grading, structures, base, surf. 5.311 mi. Hy. FM 2142, Proj. R 1721-2-1, Austin Co.;

**W. Paul Carlisle, H. L. Butler, Joe W. Hendrix & Sons,** 6434 Orchid Lane, Dallas, Tex., LB **$1,171,281,** c. conc. pavement and stabil. shoulders, 2.703 mi. Hy. US 67, Proj. C 10-12-11-14&29, Bowie Co.;

**J. W. Perry,** 501 Insurance Bldg., San Antonio, Tex., LB **$209,835,** grading, structures, base, surf. 15.168 mi. Hy. FM 1770, Proj. S 141 (1), Runnels Co.;

**Public Constr. Co.,** P. O. Box 380, Denton, Tex., LB **$249,731,** wid'n, hot mix b. conc. 9.093 mi. Hy. US 67, Proj. C 10-6-17, Titus Co. Bids Jan. 21. CD 1/7 and 12/28.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **H. H. Moeller,** Box 35, Grayston St. Station, San Antonio, Tex., LB **$2,244,000,** base, general constr. HOSPITAL, LAREDO, TEX. Sisters of Mercy, c/o Mercy Hospital, Laredo, Tex. Bids Jan. 11. CD 12/14.

## FAR WEST

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲† **Pelton Water Wheel Co.,** 2929 19th St., San Francisco, Calif., CA **$1,028,056,** 14 turbine governors, The Dalles Dam Powerhouse, Wasco Co., CIVENG—35-026-55-14, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids Nov. 30, awarded Jan. 19. CD 12/8 under LB.

▲† **Morrison-Knudsen Co., Inc.,** 319 Broadway Ave., Boise, Idaho, LB **$2,407,076,** est. $2,550,785, grading SP & S. R.R., North Dalles to Washram (The Dalles Dam) Klickitat Co., Washing., CIVENG—35-026-55-104, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids Jan. 18. CD 12/14.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **Theo. G. Meyers & Sons,** Quint and Custer Sts., San Francisco, Calif., LB **$2,340,920.** 226-unit Harbor Slope HOUSING, SAN FRANCISCO, CALIF. Housing Auth. of City of San Francisco, 440 Turk St., San Francisco, Calif. Bids Jan. 19. CD 12/27.

## CANADA

#### BIDS ASKED—BUILDINGS

▲ **Alta., Calgary**—OFFICE—BA About 2/20—Hudson's Bay Oil & Gas Co. Ltd., 534A, 8 Ave. W., Calgary, 10 story, 130x150 ft. steel, stone office, 7 Ave. and 2 St. W. $3,500,000. CD 10/21.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **Brown Boveri (Canada) Ltd.,** 1015 Beaver Hall Hill, Montreal, Que., CA, supplying one turbo-generator unit, complete with surface condensing plant, feed heating equipment and evaporating plant;

**Combustion Engineering Corp., Ltd.,** 1010 St. Catherine St. W., Montreal, Que., CA, supplying 350,000 lb. per hr. boiler, for POWER PLANT, EDMONTON, ALTA. Total est. **$5,000,000.** Canadian Utilities Ltd., 10529 Jasper Ave., Edmonton, Alta. CD 9/30.

# Proposed Projects

## WATER SUPPLY

▲ **Colo., Grand Junction** — City, Court House, voted **$1,500,000** bonds, city water sys. imprvs. CD 1/10.

▲ **Ga., Jonesboro**—Clayton Co. Comn., Jonesboro, voted $700,000 bonds modern water works plant, reservoir, distr. sys. for Clayton County. Over **$1,200,000.** CD 5/18/53.

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**Lower left:** 8-cu. yd. scraper machine is stockpiling 300 tons per hour, over an arc of 450 feet radius in a 225,000-sq. ft. storage area. Tail tower is remotely controlled from elevated cab above hopper.

**Upper right:** 2-cu. yd. Slackline Cableway spanning an average of 450 feet, lifts and conveys from an underwater deposit to a high hopper at the rate of 75 tph.

**Lower right:** 2-cu. yd. Crescent, working between a fixed point head and movable tail tower, reclaims phosphate from all points about the periphery of a roughly semi-circular storage area.

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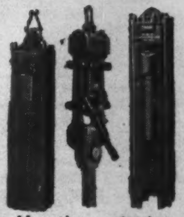

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▲ **Kan., Manhattan**—City, City Hall, municipal water plant, sys. **$1,655,400**, Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

## SEWERS, WASTE DISPOSAL

▲ **Ia., Dubuque**—City, City Hall, sewage plant, **$3,500,000**. CD 1/5.

▲ **Wis., Milwaukee**—City, City Hall, sewer construction program for 1955. **$5,000,000**. Lloyd D. Knapp, city engr.

## BRIDGES

▲ **NEW YORK and NEW JERSEY**—Port of New York Auth., 111 8th Ave., New York 1, N. Y.
lower deck of the George Washington Bridge over Hudson River. **$20,000,000**. Ammann & Whitney, 76 9th Ave., New York, N. Y., engrs. for the bridge. Andrews, Clark & Buckley, 308 E. 63 St., New York, N. Y., engrs. for New York approaches and connections. Edwards, Kelcey & Beck, 3 William St., Newark, N. J., engrs. for New Jersey approaches and connections.

▲ **NEW YORK**—Triborough Bridge & Tunnel Auth., Randalls Island, New York,
**Queens and Bronx Counties**—Throgs Neck Bridge over East River, 6-lane suspension bridge from Crysers Point, Queens Boro to Fort Schuyler, Bronx Boro. **$93,000,000**. Ammann & Whitney, 76 9th Ave., New York, engrs for the bridge. Madigan-Hyland, 28-04 41st Ave., Long Island City, engrs. for connections and approaches.

▲ **NEW YORK**—The Port of New York Auth., 111 8th Ave., New York, Zone 1.
7,200 ft. double deck (6-lanes each) suspension bridge over the Narrows from Fort Wadsworth, Staten Island to Fort Hamilton, Brooklyn. **$220,000,000**. Ammann & Whitney, 76 9th Ave., New York, Zone 11, engrs. for the bridge. Andrews, Clark & Buckley, 308 E. 63 St., New York, engrs. for the Staten Island approaches. Madigan-Hyland, 28-04 41st. Ave., Long Island City, engrs. for the Brooklyn approaches and connections. CD 6/28/45, under Unclassified.

▲ **Tex., Freeport** — Brazoria Co., Freeport, rein.-con. bridge constr. over Old Harbor Channel, between Freepot-Velasco, **$600,000**; bridge over Oyster Creek on Clute-Stratton Ridge Rd., **$150,000**; concrete vehicle bridge over Oyster Creek on proposed new road between Lake Jackson and Angleton, **$110,000**; bridge over Oyster Creek on Old Clute-Angleton Rd., **$85,000**, foregoing in Brazosport area, CD 5/28/53; 570 ft. rein.-con. type vehicle bridge, consisting of thirteen 40-ft. spans. sects. with 50-ft. center span across Brazos River Channel between Freeport and Velasco, **$1,200,000**. W. J. Lewis, co. engr. CD 5/24/51.

▲ **WASHINGTON**—State Hy. Comn., Olympia,
**Kings Co.**—exten. Alaskan Way viaduct from Dearborn to Holgate Sts. **$8,300,000**. W. A. Bugge, state hy. dir. CD 6/12/52.

## STREETS AND ROADS

▲ **N. Y., New York**—President Manhattan Boro, Municipal Bldg., Zone 7, Lower Manhattan Expressway, in vicinity of Canal St. to connect West Side Highway and the Holland Tunnel with the Williamsburg and Manhattan Bridges. **$44,000,000**. Madigan-Hyland, 28-04 41st Ave., Long Island City, consult. engrs. CD 10/16/46.

▲ **N. Y., New York**—President Manhattan Boro, Municipal Bldg., Zone 7, Mid-Manhattan Elevated Expressway along West and East 30th St., from 10th to 2nd Aves. **$43,500,000**. Andrews, Clark & Buckley, 308 E. 63 St., New York, consult. engrs. CD 9/28/44.

▲ **O., Canton**—City, Carl F. Wise, mayor, first phase of $7,300,000 North-South Expressway, running from 12th St. N. W. to 15 St. S. W. **$3,500,000**. CD 12/2/52.

▲ **Wis., Milwaukee**—City, City Hall, paving program for 1955, **$4,500,000**. Lloyd D. Knapp, city engr.

## EARTHWORK, WATERWAYS

▲ **California**—Pacific Gas & Electric Co., 245 Market St., San Francisco, erecting steam electric generating plant, near Eureka, Humboldt Co. **$8,195,000**.

## AIRPORTS

▲† **Mass., Weymouth**—HANGAR—First Naval Dist., 495 Summer St., Boston, hangar Naval Air Station, South Weymouth, **$1,500,000**, Charles Maquire & Assoc., 14 Court St., Boston, consult. engrs. CD 8/26/52.

▲ **N. Y., New York**—HELIPORT—Dpt. Marine & Aviation, Pier A, North River, Zone 4, heliport atop freight forwarding terminal, Hudson River between 28 and 32 Sts., Proj. D-234. **$1,250,000**.

## PUBLIC BUILDINGS

▲ **Calif., Los Angeles**—POWER STATIONS—Los Angeles Dpt. Water & Power, 207 S. Broadway, 11 power stations (1) Parthenia St. (2) Centinela Ave. (3) San Fernando Mission Blvd. (4) Palo Alto St. (5) Riverside Dr. (6) Laurel Canyon Blvd. (7) San Fernando Rd. (8) N. Main St. (9) Poinsettia Pl. (10) Sheldon St. (11) Civic Center. **$16,833,000**. Samuel B. Morris, c/o owner, engr.

▲ **Calif., San Jose**—SCHOOL—Eastside Union High School Dist., North White Road, **$1,985,000** bond election Mar. 8, high school.

▲ **Ind., Lafayette**—VETERINARY MEDICINE SCHOOL—Bd. Trustees Purdue University, Lafayette, veterinary medicine school. **$5,000,000**.

▲ **Mich., Berkley**—SCHOOLS—City, Bd. Educ., 2325 Catalpa St., plans by Earl G. Meyer, 806 Farwell Bldg., Detroit, Junior High School, Community Field, **$1,050,000**; Junior High School No. 2, West Lincoln St., **$840,000**. CD 10/26.

▲ **Mich., Southfield**—SCHOOLS—Southfield Twp. Bd. Educ., 24675 Lahser Rd., plans by O'Dell, Hewlett & Luckenbach, 950 N. Hunter Blvd., Birmingham, Junior High School, Nine Mile Rd. between Evergreen and Northwestern, **$1,200,000**; elementary school, Nine Mile Rd. between Beech and Telegraph Rd., **$400,000**. CD 6/16/53.

▲ **Minn., Roseville (P.O. St. Paul)**—SCHOOL—Bd. Educ., School Dist. No. 3, T. C. Schultz, clk., **$1,540,000** bond election Feb. 8, Junior High School, 2 minor addns. to grade schools, Magney, Tusler & Setter, Roanoke Bldg., Minneapolis, archts.

▲ **Mo., St. Louis**—CHILDREN'S CENTER—City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, Children's Center for Bd. of Children's Guardians to incl. 4 bldgs. for emergency care of children, studying children, group care and treatment, and offices of board, etc. **$2,000,000**. CD 4/26/43.

▲ **N. J., East Paterson**—SCHOOL—Bd. Educ., 16 Ave., voted **$2,225,000** bonds for Junior-Senior High School. CD 1/4.

▲ **N. Y., Bayside**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-675, P. S. 169, Bell Blvd. and 23 Ave. **$1,900,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., Brooklyn** — SCHOOL — Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-154, P. S. 261, vicinity Atlantic Ave. and Hoyt St. (replacing P. S. 78). **$2,000,000**. M. L. Radoslovitch, c/o owner, engr. CD 8/13/45.

▲ **N. Y., Brooklyn** — SCHOOL — Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-111, P.S. 270, Lafayette and Classon Aves. **$2,300,000**. M. L. Radoslovitch, c/o owner, engr. CD 2/10/44.

▲ **N. Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Frederick G. Frost, Jr. & Assocs., 144 E. 30 St., New York Zone 16, Proj. E-630, Junior High School 33, vicinity Park and Marcy Aves. **$3,100,000**. CD 11/15.

▲ **N.Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Abraham Grossman, 250 West 24 St., New York, Zone 11. Proj. E-608, modernizing Bushwick High School, Irving Ave. and Madison St. **$2,400,000**.

▲ **N.Y., Brooklyn**—HIGH SCHOOL—Bd. Educ. Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Joseph Blumenkranz & Assocs., 327 Lexington Ave., New York, Zone 16, Proj. E-920, modernizing Erasmus Hall High School, Flatbush and Church Aves., **$2,600,000**.

▲ **N.Y., Brooklyn**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City Zone 1, Proj. E-853, P. S. 272, Seaview Ave. and E. 100 St. **$1,800,000**. M. L. Radoslovich c/o owner, engr.

▲ **N.Y., Brooklyn**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Arthur Holden & Assocs., 570 Lexington Ave., New York, Zone 22, Proj. E-814. Sheepshead Bay High School, Coyle St. and Avenue Y. **$6,960,000**.

▲ **N. Y., Brooklyn**—SCHOOL—Bd. Educ. Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Unger & Unger, 130 Broadway, Zone 11, Proj. E-166, P. S. 58, vicinity Smith St. and Third Pl. **$2,000,000**.

▲ **N.Y., Brooklyn**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Seelig & Finkelstein, 153 Pierrepont St., Zone 2, Proj. E-912, P. S. 262, vicinity Vanderbilt Ave. and Sterling Pl. **$2,000,000**.

▲ **N. Y., Brooklyn**—High SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Lloyd Morgan & Eugene V. Meroni, Architects, Harry P. Jaenike Associate, 119 E. 40 St., New York, Zone 17, Proj. E-745, Junior High School 61, vicinity Rutland Rd. and Bedford Ave., **$3,100,000**.

▲ **N. Y., Brooklyn** — HIGH SCHOOL — Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-770, Junior High School 278, vicinity Nostrand Ave. and Avenue S. **$3,200,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., Brooklyn** — HIGH SCHOOL — Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Rogers & Butler, 219 E. 44 St., Zone 17, Proj. E-98, Junior High School 101, vicinity Lafayette and Balcolm Aves. **$3,100,000**.

▲ **N. Y., Elmhurst**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Maurice R. Salo & Assocs., 607 Fifth Ave., New York Zone 17, Proj. E-829, modernization of Newton High School Wing "C". **$1,600,000**.

▲ **N. Y., Flushing**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-924, Junior High School 189, 147 St. and Sanford Ave. **$3,000,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., Jamaica**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Fellheimer & Wagner, 155 E. 42 St., New York, Zone 17, Proj. E-16, Thomas A. Edison Vocational High School, 164 St. and Grand Central Parkway. **$6,675,000**. CD 1/17/44.

▲ **N. Y., Long Island City**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Paul Resnick, 654 Madison Ave., New York, Zone 21, Proj. E-914, Junior High School 204, 27 St. and 36 Ave. **$3,100,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Carson & Lundin, 50 Rockefeller Plaza, Zone 20, Proj. E-905, P. S. 175, vicinity 7 Ave. and 138 St. **$2,000,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-909, P. S. 111, vicinity 10th Ave. and 51st. **$1,900,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-916, Junior High School 142, vicinity E. 232 St. and Bronxwood Ave. **$3,500,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Brown & Guenther, 1860 Brooadway, Zone 23, Proj. E-911, Junior High School 139, vicinity 140 St. and Brook Ave. **$3,100,000**.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Emery Roth & Sons, 575 Madison Ave., Zone 22, Proj. E-918, Bronx High School of Science. **$6,000,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by de Young, Moscowitz & Rosenberg, 205 E. 42 St., Zone 17, Fashion Institute of Technology. **$5,000,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-219, P. S. 41, vicinity Greenwich and Sixth Aves. **$1,700,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Ketchum, Gina & Sharp, 277 E. 44 St., Zone 17, Proj. E-927, Junior High School 143, Kingsbridge Area. **$2,800,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-755, P. S. 140, Eagle Ave. and 163 St. **$2,200,000**. M. L. Radoslovich, c/o owner, engr.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, Proj. E-702, P. S. 8, Mosholu Parkway and Briggs Ave. **$2,000,000**.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Urbahn, Brayton & Burrows, 654 Madison Ave., Zone 21, Proj. E-902, Junior High School 141, Riverdale Area. **$2,800,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr. 42-15 Crescent St., Long Island City, Zone 1, plans by Wechsler & Schimmenti, 17 E. 42 St., Zone 17, Proj. E-867, P. S. 129, vicinity Old Broadway and 132 St. **$1,900,000**.

▲ **N. Y., New York**—HIGH SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Ferrenz & Taylor, 152 W. 42 St., Zone 36, Proj. E-904, Junior High School 45, vicinity Second Ave. and 120 St. **$3,100,000**.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Raymond M. Irrera, 29-28 41st Ave., Long Island City, Proj. E-854, P. S. 2, vicinity Henry and Pike Sts. **$2,000,000**.

▲ **N. Y., White Plains**—SCHOOLS—Bd. Educ., 279 Hamilton Ave., plans by Shirley & DeShaw, Grand Central Terminal New York, Zone 17, Rochambeau School addn., Fisher Ave. **$350,000**; plans by Knappe & Johnson, 390 E. 150 St., New York, Zone 55, school, Church St., **$350,000**; plans by Perkins & Will, 171 East Post Rd., White Plains, Junior High School, in Gedney area, **$2,750,000**. CD 11/24/43.

▲ **O., Columbus**—CLASSROOM—Ohio Dpt. P. Wks., State Dpts. Bldg., Columbus, brick, stone, rein.-con. classroom bldg. for College of Agriculture and Science Bldg. for College of Veterinary Medicine, Ohio State University. **$2,000,000**.

▲ **Que., Joliette**—MENTAL HOSPITAL—Dpt. P. Wks. Quebec City, 1,500 bed mental hospital. **$18,000,000**.

▲ **Que., Three Rivers**—MENTAL HOSPITAL—Dpt. P. Wks., Quebec City, 1,500 bed mental hospital. **$18,000,000**.

## COMMERCIAL BUILDINGS

▲ **Calif., Lancaster**—DWELLINGS—S. Widre & Sons, c/o H. C. Light, archt., 9061 Santa Monica Blvd. Los Angeles, 219 frame, stucco dwellings. **$2,000,000**.

▲ **Colo., Denver**—BANK—Federal Reserve Bank of Kansas City, 111 17 St., plans by T. H. Buell & Co., archts.-engrs., 730 14 St., bank addn., **$1,000,000**.

▲ **Md., Baltimore**—HOMES—Jos. Meyerhoff Co., 10 E. Fayette St., Zone 2, 260 masonry homes on site of Lawrence Park, Eastern Ave. and Old North Point Rd., near Essex, $2,225,000.

▲ **Md., Baltimore**—SHOPPING CENTER—Jos. Meyerhoff Co., 10 E. Fayette St., Zone 2, shopping center, 60 acre site, Eastern Ave. and Old North Point Rd., near Essex, **$15,000,000.**

▲ **Md., Silver Spring**—HOMES—**Perlmutter Bros., Inc.,** 4711 Coachway Dr., Randolph Hills, 200 detached brick homes. Old Bladensburg Rd. and Gable St. between Four Corners and Wheaton, **$2,600,000.**

▲ **Minn., St. Paul**—SHOPPING CENTER—J. T. Commerford, 1648 Ford Parkway, St. Paul, and L. Murray, 5720 Wayzata Blvd., Minneapolis, plans by Ellerbe & Co., E. 505 First National Bank Bldg., shopping center, Hudson Rd. in area bounded by East Ave., Ruth and Conway Sts. **$2,200,000.**

▲ **Mo., Overland (St. Louis 14 P.O.)**—SHOPPING CENTER AND RESIDENCES—Fanchon & Marco-St. Louis Amusement Co., James H. Arthur, mgr. real estate and commercial properties, Fox Theater Bldg., 527 N. Grand Blvd., St. Louis, Zone 3, plans by Kenneth E. Wischmeyer, Bd. Educ. Bldg., 911 Locust St., St. Louis, Zone 1, Lakeside Shopping Center on 10 acre site, 300 residences, parking area, Page Ave. east of Woodson Rd. **$2,000,000.** Harland Bartholomew & Assoc., Louderman Bldg., 317 N. 11 St., St. Louis, Zone 1, engrs. (land planning).

▲ **N. Y., Hempstead**—PHYSICS-ENGINEERING, etc.—Hofstra College, 1000 Fulton Ave., physics and engineering bldg., library addn., music-arts bldg., classroom bldg. on campus. **$2,000,000.**

▲ **Pa., Phila.**—HOTEL—Albert M. Greenfield & Co., 1325 Walnut St., hotel, Washington Square vicinity. **$10,000,000.**

▲ **Pa., Pittsburgh**—OFFICE—Bell Telephone Co., 416 7th Ave., plans by Press C. Dowler, Century Bldg., 10 story, steel, masonry headquarters office, Blvd. of Allies, Ferry St. and 4th Ave. **$2,500,000.** CD 8/18.

▲ **Va., Fairfax**—HOMES, etc.—Michnick-DiMaio Co. 1528 "K" St. N.W. Wash. D. C., plans by Walter Huenemoerder, 2647 Connecticut Ave., N.W. Wash., D. C., 300 homes, shopping center, North St. (Willard Estate). **$12,000,000.**

▲ **Wis., Milwaukee**—SHOPPING CENTER—Owner, c/o B. Sampson, 222 E. Erie Ave., shopping center, Layton Ave. **$3,000,000.**

▲ **B. C., Port Moody**—HOUSING—Port Moody Coquitlam Development Ltd., John St., plans by W. Kennedy, 1240 West Broadway, Vancouver, 400-houses in housing project, Como Road area. **$4,000,000.**

▲ **Ont., Ottawa**—HOUSING—Campeau Constr. Co., Ltd., 525 Bank St., 750 unit, housing, on Sanderson farm on Smythe Road off Alta Vista, **$7,500,000;** 150-unit housing, Woodroffe Ave. between Carling Ave. and Base Line, **$1,500,000.**

▲ **Ont., Ottawa**—HOUSING—J. P. Chenier Co., Ltd., 1057 Merivale Rd., 200 bungalows in area of Heron Road and Bank St., **$2,600,000;** 50 houses south side of Carling Ave. opposite shopping center **$500,000;** 250 houses on Metcalfe Rd. at "Blossom Park", **$2,700,000.** CD 2/18/53.

▲ **Ont., Toronto**—APARTMENT PROJECT—Ridout Real Estate Ltd., 46 Bloor St. W., plans by Gibson & Pokorny, 1104 Bay St., 2 wings of 8 and 12 story, 635-suites, apartment project, incl. stores, nursery, playgrounds on main floor, tea-garden on roof, 315-car parking facility, on block at Bay and Yorkville Sts. **$6,350,000.**

▲ **Ont., Toronto**—OFFICE—Shell Oil Co. Ltd., 25 Adelaide St. E., plans by Marani & Morris, 1250 Bay St., office headquarters, University Ave. and Gerrard St. Over **$2,000,000.**

## INDUSTRIAL BUILDINGS

▲ **Calif., Long Beach**—BUILDINGS—**Kaiser Gypsum Co.,** 1924 Broadway, Oakland, 4 structural steel buildings and building alterations. **$3,000,000.** Kaiser Engineers, 1924 Broadway, Oakland, consult. engrs.

▲ **Ill., Morton Grove**—PLANT—Avon Products Co., 30 Rockefeller Plaza, New York, N. Y. Plans by Skidmore, Owings & Merrill, 100 W. Monroe St., Chicago, Zone 3, 2 story, 200,000 sq. ft. plant, **$2,200,000.**

▲ **Ind., Terre Haute**—MILL—American Brass Co., Sub. Anaconda Copper Milling Co., Waterbury 88, Conn., aluminum mill, near here. **$25,000,000.**

▲ **Ont., Sarnia**—PLANT—Ethyl Corp. of Canada Ltd. 44 King St. W., Toronto, tetraethyl lead mfg. plant 100-acre site **$2,000,000.** Bunam Turner, vice pres. in charge of engr.

## UNCLASSIFIED

▲ **Calif., Long Beach**—**BEACH BEAUTIFICATION, etc.**—City, 205 S. Broadway, plans **by F.** Ellwood Allen, Bennington, Vt., beach beautification and development, **$15,000,000** CD 1/16/52.

▲ **Calif., San Diego**—INDUSTRIAL PIER—City, Civic Center, **$11,000,000** bond election Apr. 19, industrial pier. CD 12/6/44.

▲ **Indiana**—INTERCHANGE UTILITY BLDG.—Indiana State Toll Rd. Comn., 309 W. Washington St., Indianapolis, plans by Clyde E. Williams, 118 E. Franklin St., Elkhart, interchange utility bldgs., toll booths in Laporte, Porter, Lake, Stuben, LaGrange, Elkhart and St. Joseph. **$3,500,000.** CD 2/10/54, under Streets and Roads.

▲ **Mass., Boston**—TELEVISION STATION—Post Publishing Co., 257 Washington St., television station, **$1,300,000,** A. D. Ring & Assoc., Pennsylvania Bldg., Wash. 4, D. C., consult. engrs.

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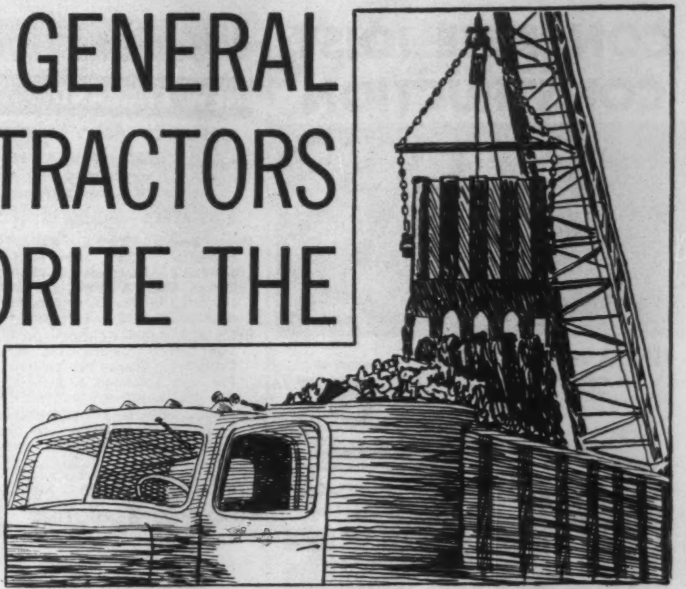

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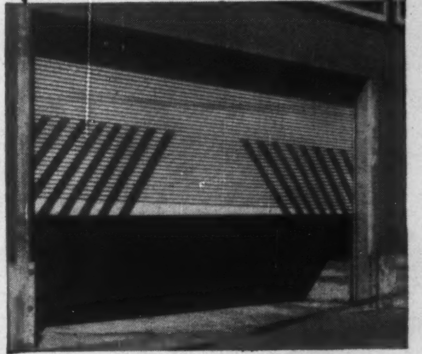

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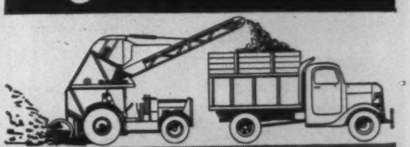

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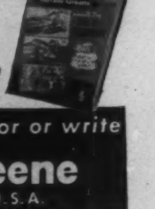

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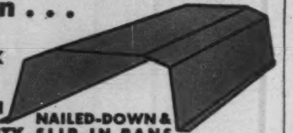

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# Bids—Low Bids—Contracts—Second Section

## NEW ENGLAND

### BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 9 Massachusetts

### BIDS ASKED—BUILDINGS

**Mass., Beverly**—SCHOOL--BA 2/17—City, 3 Essex St., elementary school, Beverly Cove Montserrat area. $400,000. Plans deposit $100, refundable. Addne, Parker, Clinch & Crimp, 177 State St., Boston, archts. Hubbard, Lawless & Tracey, 177 State St., Boston, mech. engrs. CD 7/15/53.

**Del., Wilmington**—SCHOOL—BA 2/22—St. Thomas Roman Catholic Church, 301 N. Bayard Blvd., school. $400,000. Charles H. Wolf, 112 S. 16 St., Phila., Pa., engr. Gleeson & Mulrooney, Fox Bldg., Phila., Pa., archts. CD 9/16.

▲ **Conn., Manchester**—SCHOOL—BA 3/8—Town Bd. Educ., Richard Martin, genl. mgr., Town Hall, high school, Memorial Field off East Center St. $5,000,000. Plans deposit $150. Extended date. Ebbets, Frid & Prentice, 862 Asylum Ave., Hartford, archts. CD 1/3.

### HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Alexander Constr. Co.**, 4641 Hiawatha Ave., Minneapolis, Minn. LB **$424,000**, est. $400,000. resurf. roads, warm-up pads, Otis Air Force Base, Inv. 19-603-55-23, FALMOUTH, MASS. Purch. & Contg. Office, Otis Air Force Base, Falmouth, Mass.

### BUILDINGS

LOW BIDS AND CONTRACTS

**Stamell Constr. Co., Inc.**, 33 Hurley St., Cambridge, Mass. LB Approx. **$95,000.** SHOP and OFFICE, Sixth and Arlington Sts., CHELSEA, MASS. Air Conditioning Contractors, Inc., 10 Everard St., Revere, Mass. Bids Jan. 19. CD 1/13.

**Jack A. Halprin, Inc.**, 675 State St., New Haven, Conn., CA, **$893,000.** Woodrow Wilson High SCHOOL, Hunting Hill east of present school, MIDDLETOWN, CONN. Town, Hunting Hill Ave., c/o supt. office, Middletown, Conn. Bids Jan. 7. CD 1/13, under LB.

## MIDDLE ATLANTIC

### BIDS ASKED—HEAVY CONSTRUCTION

▲ **Pa., Catasauqua**—BA 2/10—Castasauqua Boro, Town Hall, 118 Church St., sewage treatment plant and sanitary sewers. $1,500,000. Extended date. Gannett, Fleming, Corddry & Carpenter, 500 N. 2nd St., Harrisburg, engrs. CD 12/30.

† **N. Y., Rome**—RESEALING JOINTS—BA 2/16—Purch. Div., Rome Air Force Base, Rome, resealing part of joints of concrete roadway joints and repairing and sealing of cracked surfaces, Rome Air Force Base, Griffiss Air Force Base, Inv. 74. CD 10/6.

† **N. J., Palermo Air Force Base**—HEATING PLANT—Bids Asked—Procurement Office, New Castle County Airport, Wilmington, Del., central heating plant addn., Inv. 11. Plans deposit $5.

### BIDS ASKED—BUILDINGS

▲ **N. Y., New York**—HIGH SCHOOL—BA 2/4—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr., plumbing and drainage, heating and ventilating, electrical work and lighting fixtures, elevators and escalators for new New York School of Printing, W. 49 St. and W. 50 St. between 9th and 10th Aves., Manhattan Boro. Est. Approx. $3,554,000. Plans deposit $32 general constr., $13 plumbing and drainage, $12 heating and ventilating, $12 electrical work and lighting fixtures, $5 each elevator and escalators. Extended date. CD 12/30.

▲ **Pa., Pittsburgh**—HOSPITAL—BA 2/8—Shadyside Hospital, 5230 Center Ave., 5 story, brick, block, stone, steel hospital addn. $1,400,000. Press C. Dowler, 803 Century Bldg., archt. CD 1/31/45.

**Pa., Phila.**—WAREHOUSE—BA 2/9—Atlantic Refining Co., 260 S. Broad St., warehouse at Point Breeze Refinery. $100,000. CD 1/10/49.

▲ **N. Y., Albany**—HOSPITAL—BA 2/15—Albany Hospital, New Scotland Ave., 6 story, bsmnt., brick main hospital. $2,000,000-$2,500,000. Curtain & Riley, 45 Newbury St., Boston, Mass., archts. CD 12/2/51.

▲ **Pa., Gibsonia**—HIGH SCHOOL—BA 2/15—Richland Twp. School Auth., Gibsonia, 1 and 2 story bsmnt., 66x325 ft., 116x126 ft. brick, block, steel Junior-Senior High School, Richland Twp. $1,500,000. Plans deposit $50. Joseph Hoover, 333 Blvd. of Allies, Pittsburgh, archt.

† **Md., Aberdeen Proving Ground**—LABORATORIES—BA 2/23—U. S. Eng., P. O. Box 1715, Baltimore, Zone 3, fire control testing laboratories, 2 story, bsmnt., concrete components laboratory, systems laboratory, 1 story, concrete outside utilities. $500,000. Plans deposit $40. Mills, Petticord & Mills & Assoc., 14 St. and Park Rd. N. W., Wash., D. C., engrs. CD 12/8.

▲ **N. J., Trenton**—SCHOOLS—BA 3/1—Hamilton Twp. Bd. Educ., 2069 Greenwood Ave., Sayon Elementary School, $400,000; Steinart Elementary School, $600,000. Hankin, Stull & Backus, 495 W. Hanover St., archts. CD 10/11.

### SOON LETS CONTRACT—BUILDINGS

▲ **N. Y., Astoria**—OIL STORAGE TERMINAL—East River Petroleum Terminals, 210 Varick Ave., Brooklyn, Zone 6, soon lets contract 25 m.g. oil storage terminal, foot of 38 St. and 19 Ave. $3,500,000. Otto J. Sambach, 89-30 161 St., Jamaica, engr.

▲ **N. Y., New York**—RESIDENCE HALL—New York University, Washington Square, soon lets contract, 9 story Hayden Residence Hall, Washington Square West, $1,000,000. Eggers & Higgins, 100 E. 42 St., Zone 17, archts. CD 8/18.

### HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Bero Constr. Corp.**, 259 Delaware Ave., Buffalo 2, N. Y., CA **$3,606,077**, Dental Clinic, Plattsburgh Air Force Base, Serial No. ENG-30-075-55-198, PLATTSBURGH, N. Y. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Jan. 5. CD 11/30.

▲† **T. C. Bateson Constr. Co.**, 6800 Denton Dr. Dallas, Tex., LB **$5,463,817**, bldgs. and utilities, FY 55, Plattsburgh Air Force Base, PLATTSBURGH, N. Y. U. S. Eng., 80 Lafayette St., New York 13, N. Y. Bids Jan. 25. CD 1/6.

† **Pritz Corp.**, 220 W. 42 St., New York 36, N. Y., CA **$122,357**, repair airmens dormitories, Sampson Air Force Base, No. 30-616-55-24, SAMPSON, N. Y. Purch. & Contg. office, Bldg. A-30, Sampson Air Force Base, Geneva, N. Y. Bids Dec. 3. CD 11/24.

**NEW JERSEY**—New Jersey Turnpike Auth., Administration Bldg., New Brunswick,

**Klevens Corp.**, 3 Federal St., Yonkers, N. Y., LB **$828.842**, Contract No. N-19, 19 piers, 2 abutments for substructure of Bayview Viaduct on Newark Bay-Hudson County Extension of New Jersey Turnpike, Jersey City, Hudson Co. Bids Jan. 25. CD 1/5.

† **American Dredging Corp.**, 12 S. 12 St., Phila., Pa., LB **$63.547**, dredging Cape May Canal, Cape May Co., NEW JERSEY. U. S. Eng., 2635 Abbottsford Rd., Phila., Pa.

▲† **Walter Kidde Constructors. Inc.**, 140 Cedar St., New York, N. Y., CA **$2,000,000.** O.P.S. and Power Bldgs., associated facilities, tank farm for Air Force, WRIGHTSTOWN, N. J. Western Electric Co., 220 Church St., New York, N. Y. Bids Dec. 27.

▲ **PENNSYLVANIA**—Pennsylvania Turnpike Comn., 11 N. 4th St., Harrisburg,

**H. J. Williams, Inc.**, York, Pa., CA **$2,898,506.** constr. 3.59 mi. (Sec. 36-D) of Northeastern Exten. in Washington Twp., Lehigh Co. Bids Jan. 5. CD 1/7, under LB.

**West Penn Eng. & Constr.**, Irwin, Pa., LB **$120.877.** (B) water distr. sys., NEW ALEXANDRIA, PA. Municipal Auth. of New Alexandria, New Alexandria, Pa. Bids Jan. 14. CD 1/4.

**Barth Constr. Co.**, 120 Bridge St., Etna, Pa., LB **$105,646.** sanitary sewers, O'Hara Twp., SHARPSBURG, PA. Municipal Auth. of O'Hara Twp., 7 Valley Rd., Sharpsburg, Pa. Bids Jan. 12. CD 12/23.

† **Central States Constr. & Equip. Co., Inc.**, 22 W. Main St., Belleville, Ill., CA, **$663,413**, terminal bldg., etc., Dover Air Force Base, ENG-36-109-55-29, DOVER, DEL. U. S. Eng., 2635 Abbottsford Ave., Phila., Pa. Bids Jan. 13. CD 1/19, under LB.

**Edward A. Daylor Co., Inc.**, Box 551, Coatesville, Pa. CA **$683,000.** I-beam bridge with steel grading, etc., ALLENTOWN, PA. Lehigh Co. and City of Allentown, Court House Bldg., Allentown, Pa. Bids Jan. 6. CD 12/3.

**MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

**Rea Constr. Co.**, Box 2015, Charlotte, N. C. CA **$739,668.** surf. 2.98 mi. dual hy. State Rte. 205, near Briar Ditch, Contr. P 724-9-320, Prince George Co. Bids Nov. 4, awarded Jan. 24. CD 11/10, under LB.

**MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

**F. P. Asher Jr. & Sons Co.**, 1715 West St., Annapolis, Md. CA **$504,100.** surf. 5.738 mi. State Rte. 33, Romancoke toward Matapeake, Contr. Q-295-1-220, Queen Anne Co. CD 12/6, under LB.

### BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Brown-Turner, Inc.**, 205 E. 42 St., New York 17, N. Y. LB **$3.391,380**, general constr.;

**E. W. Tompkins Co., Inc.**, 123 Sheridan Ave., Albany, N. Y., LB **$664.437**, heating;

**George J. Martin & Son**, 20½ Market St., Albany, N. Y. LB **$562,950**, electrical work for new STATE OFFICE BLDGS. for Department Commerce and Department Civil Service. Campus Site, ALBANY, N. Y. Bureau Contracts & Accounts, Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Kenneth G. Reynolds, 143 Washington Ave., Albany 6, N. Y., archt. Bids Jan. 20. CD 11/14.

**Commercial Equities, Inc.**, 16 Court St., Brooklyn 2, N. Y. Owner Builds. **$754,000.** 6 story APARTMENT, 3087-3103 Ocean Parkway, BROOKLYN, N. Y. CD 11/12.

**Berfond & Miller**, c/o Trylon Realty Co., 98-69 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$560,000.** 35 HOUSES, North Jerusalem Ave. between Bellmore Rd. and Wantagh State Parkway, EAST MEADOW, N. Y.

**Oakledge Homes,** c/o Henry A. Klar Realty Co., 220-02 Horace Harding Blvd., Bayside, N. Y. Owner Builds. **$880,000.** 55 HOUSES, tract on Fifth Ave., near Larkfield Rd., north of Jericho Turnpike, EAST NORTHPORT, N. Y.

**Sherwood Gardens Homes,** c/o Stanley Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. **$700,000.** 44 HOUSES, 15-acre tract, Block Blvd., north of Merrick Rd., MASSAPEQUA PARK, N. Y.

▲ **Joseph P. Blitz, Inc.,** 1 E. 57 St., New York 22, N. Y. CA **$2,000,000.** 16 story APARTMENT, Madison Ave. and 62 St. NEW YORK, N. Y. 681 Madison Corp., c/o contractor.

**Spade Homes,** c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$900,000.** 75 HOUSES, Deer Park and Hunter Aves., NORTH BABYLON, N. Y.

▲ **Edmund J. Pappoli Co., Inc.,** 12 Norfolk St., Cambridge, Mass., LB **$1,111,000,** est. $1,000,000. Women's DORMITORY, Mt. Olympus, SYRACUSE, N. Y. Syracuse University, Admin. Bldg., Syracuse, N. Y. Bids Jan. 18. CD 1/11.

**Palomar Park Homes,** c/o Albert B. Meklenburg Organization, 1038 Northern Blvd., Roslyn, N. Y. Owner Builds. **$975,000.** 65 HOUSES, WANTAGH, N. Y.

▲ **Emerson Manor Homes,** c/o John M. Gabriel, 334 State Hy. 17. Paramus, N. J. Owner Builds, $2,350,-000. 132 HOUSES on 50-acre site along Linden Ave. off Lincoln Blvd., EMERSON, N. J.

**Valley Estates Homes** c/o Erwin Gerber, archt., 1180 Raymond Blvd., Newark, N. J. Owner Builds, **$600,000,** 58 HOUSES on tract on Boesel and Huff Aves., MANVILLE, N. J.

**Isadore Shooster,** 36 Pleasant Hill Rd., Chester, Pa. Separate contracts. **$800,000.** RESIDENTIAL DEVELOPMENT, 7th and Tilghman Sts., CHESTER, PA.

**Garfield Homes, Inc.,** Long Lane and Sansom St., Upper Darby, Pa., Separate Contracts. **$350,000.** RESIDENTIAL DEVELOPMENT, Garfield Ave., DOWNINGTOWN, PA.

**George H. Chilli,** 805 Ann St., Homestead, Pa., CA Approx. **$400,000.** 4 story, 35x139 ft., brick, block, stone, steel BROTHERS HOUSE, GIBSONIA, PA. St Barnabas Free Home, Gibsonia, Pa. Bids Dec. 23. CD 12/16.

▲ **Gamble & Gamble Constr. Co.,** Washington St., Bolivar, Pa., LB **$1,583,000.** 2 story, brick, block, steel Senior HIGH SCHOOL, Hempfield Twp., GREENSBURG, PA. Hempfield Area Joint School Dist., R.D. 6, Greensburg, Pa. Bids Jan. 19. CD 12/23.

**Wm. M. Hollinger,** Dauphin Bldg., Harrisburg, Pa. Own Forces. **$850,000.** 85 row HOUSING UNITS, 24, 25, Duke and Brookwood Sts., HARRISBURG, PA.

**B. Bornstein & Son,** 2027 Arch St., Phila., Pa., LB **$715,100.** general contract Commercial MUSEUM alterations, PHILA., PA. Dept. Procurement, City Hall Annex, Phila., Pa. Bids Aug. 12. CD 8/3.

**Henry M. Taggart, Inc.,** 1924 Chestnut St., Phila., Pa. CA **$507,000.** DORMITORY, PHILA., PA. Phila. Textile Institute, School House Lane and Henry Ave., Phila., Pa. Bids Jan. 12. CD 1/19, under LB.

**Evans Constr. Co.,** Lycoming Ave. and Broad St., Phila., Pa., Separate Contracts. **$900,000.** RESIDENTIAL DEVELOPMENT, Stewart Lane, etc., RIDLEY PARK, PA.

**Modern Housing Corp.,** 102 Bryn Mawr Ave., Cynwyd, Pa., Separate Contracts. **$350,000.** RESIDENTIAL DEVELOPMENT, Conestoga Rd., ROSEMONT, PA.

**Phillip E. Jacob,** 14 S. Swarthmore Ave., Phila., Pa. Separate Contracts. **$550,000.** RESIDENTIAL DEVELOPMENT, Crum Creek and Havard Ave., SWARTHMORE, PA. Mather H. Lippincott, Jr., 112 S. 16 St., Phila., Pa., archt.

**Nason & Cullen,** 6522 Vine St., Phila., Pa., CA **$355,000.** HOSPITAL addn. to Childrens Ward, UPLAND, PA. J. Lewis Crozer Home & Hospital, Upland, Pa. The Pepper Assocs., 1616 Locust St., Phila., Pa., archts.

**A B C Corp.,** 930 Merion Square Rd., Gladwynne, Pa. Separate Contracts. **$460,000.** RESIDENTIAL DEVELOPMENT, Weadley and Eagle Rds., WAYNE, PA. Kjell Ingebrigsten, 930 Merion Square Rd., Gladwynne, Pa., archt.

**Morton Macht,** 11 E. Fayette St., Baltimore, Md. Owner Builds. **$426,000.** 46 row type, 2 story HOUSES, Cedar Garden and Winford Rds., Richmond and Pelham Aves., BALTIMORE, MD.

▲ **Wildwood Development Co., Inc.,** 745 Shoreham Bldg., Wash., D. C. Owner Builds. **$3,000,000.** 150 split-level brick HOMES, near National Institute of Health, BETHESDA, MD. A. Sind, 745 Shoreham Bldg., Wash., D. C., archt.

▲ **Davis & Platt, Inc.,** 401 Butternut St. N.W., Wash., D. C. CA Est. **$1,000,000.** BOTTLING PLANT, on Ritchie Ave. near Central Ave., LANHAM, MD. James A. Crass, Coca Cola Bottling Co., Roseneath Rd. and Clay St., Richmond, Va. J. J. Schlosser, 409 Butternut St. N.W., Wash., D. C., archt. CD 12/2.

▲ **Blake Constr. Co.,** 33 E St. S.W., Wash., D. C., LB, **$1,978,000.** Woodson Junior HIGH SCHOOL, Minnesota Ave., near Grant St. N.E., WASH., D. C. D. C. Govt. Dir. Bldg. & Grounds, 499 Pennsylvania Ave. N.W., Wash., D. C. Bids Jan. 25. CD 12/29.

**Magness & Staib Constr. Co.,** 405 Phila. Pike, Wilmington, Del., Separate Contracts, **$500,000,** RESIDENTIAL DEVELOPMENT, Kaimensi Gardens, MARSHALLTON, DEL.

## SOUTH

### BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 9 Louisiana

### BIDS ASKED—BUILDINGS

▲ **Va., Arlington**—HOTEL—BA 2/17—Hot Shoppes, Inc., 1355 Lee Hy., 340-unit Hotel Potomac Terrace (motel type) parking area, swimming pool, offices, dining room. $3,100,000. Joseph G. Morgan, 2412 17th St., N.W. Wash., D. C., archt. Beall & LeMay 1726 M St., N.W., Wash., D. C. engrs. CD 8/10.

▲† **Va., Fort Eustis**—OFFICERS QUARTERS—BA 2/17—U. S. Eng., foot of Front St., Norfolk, four 60-man bachelor officers quarters, $1,000,000. Plans deposit $10. Mills, Petticord & Mills, 3308 14th St., N.W. Wash., D. C., engrs.-archts. CD 9/27.

## HEAVY CONSTRUCTION

### LOW BIDS AND CONTRACTS

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comn., Raleigh,

**Grannis & Sloan, Inc.,** Box 3006, Fayetteville, N. C., LB **$579,195,** grading 16.5 mi. U. S. 70, Proj. No. 2151, F-168 (11), Craven Co.;

**Barrus Constr. Co.,** Box 395, Kinston, N. C., LB **$96,-220,** STBC, b. conc. binder and surf. 3.32 mi. US 117, Proj. 2853, F-13 (14), Wayne Co.; LB **$406,714,** est. $400,000-$500,000, CABC and b. conc. binder and surf. 5.52 mi. NC 24, Proj. 3697. D-AD-F-3 (2), Onslow Co.;

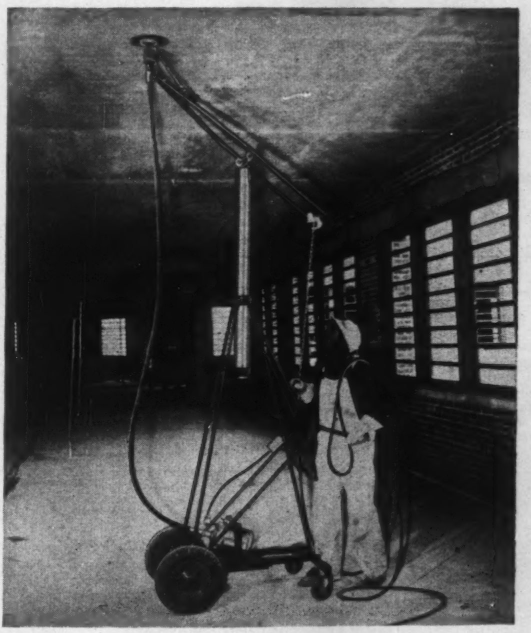
**F. D. Cline Paving Co.,** Box 349, Raleigh, N. C., LB **$378,193,** est. $400,000-$500,000, subgrade reinf., CABC b. conc. binder and surf. and c. conc. 1.53 mi. Proj. 4864, U-694 (5), Wake Co.;

**W. E. Graham & Sons,** Box 268, Cleveland, N. C., LB **$77,174,** CABC and bit. surf. tr. 2.63 mi. US 21 (reloc.), Proj. 7654. F-273 (10), Surry Co. Bids Jan. 25. CD 1/17.

▲† **MacDougald Constr. Co.,** 1625 Northside Dr. N.W. Atlanta, Ga., LB **$3,613,000.** 10,000 ft. runway, Warner Robins Air Force Base, MACON, GA. U. S. Eng., 200 E. St. Julian St., Savannah, Ga. Bids Jan. 21.

▲† **Ivey Brothers Constr. Co.,** 3252 Peachtree Rd., Atlanta, Ga. LB **$1,528,178.** warehouse utility system, access roads, Brookley Air Force Base, MOBILE, ALA. U. S. Eng., 2301 Grant St., Mobile, Ala. Bids Jan. 27. CD 1/20.

RUBBING CEILINGS?



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- **FASTER AND EASIER:** One man will average almost 4000 sq. ft. per day. Does not need scaffolding.
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GIRAFFE

CONCRETE GRINDING CORP.
300 STRAIGHT ST. PATERSON, N. J.

† **Warren Bros. Roads Co.**, Box 549, Birmingham, Ala. CA **$916,850.** articulated concrete mattress at Greenville, Mississippi Casting Field, MISSISSIPPI. U. S. Eng., P.O. Box 60, Vicksburg, Miss. Bids Jan. 6. CD 12/22.

▲**LOUISIANA**—Mississippi River Bridge Auth., 422 City Hall Annex, New Orleans,
**Dravo Corp.**, Neville Island, Pittsburgh 25, Pa. LB **$6,691,590. Contr.** No. 3 substructure of river crossing for Greater New Orleans Bridge over Mississippi River at New Orleans. Bids Jan. 25. CD 12/15.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲**Stratford Building Co., Inc.**, c/o Ryder, Struppmann & Neumann, archts., 163-18 Jamaica Ave., Jamaica, N. Y., Owner Builds. **$4,000,000.** 200 HOUSES, 78-acre tract Fort Hunt Rd. and Mt. Vernon Blvd.. MOUNT VERNON, VA.

**Barge-Thompson**, 136 Ellis St., N.E. Atlanta, Ga. CA, **$500,000.** DORMITORY, DECATUR, GA. Agnes Scott College, Decatur, Ga. Ivey & Crook, Candler Bldg., Atlanta, Ga., archts. Awarded Jan. 19.

**Farnsworth & Chambers Co., Inc.**, Box 332, New Orleans, La. LB **$777,707.** completion, alterations and addns. to East and West DORMITORIES, existing Highland Hall DORMITORY, BATON ROUGE, LA. State University, Thomas D. Boyd, purch. agt., Baton Rouge, La. Bids Jan. 19. CD 1/5.

▲ **Leo C. Miller Co.**, 333 E. Bloom St., Louisville, Ky. CA **$1,195,908,** with Alt. 1 and 2, general contract Edward Gottschalk Junior High SCHOOL, LOUISVILLE, KY. Bd. Educ., Fifth and Hill Sts., Louisville, Ky. Bids Jan. 12, awarded Jan. 24. CD 1/17, under LB.

## MIDDLE WEST

#### BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 15 Wisconsin
STREETS AND ROADS
February 15 Wisconsin March 1 Ohio

**Mich., Detroit**—RADIO STATION—BA 2/15—City, at office M. F. Wagnitz, city engr., Guardian Bldg., Zone 26, Contr. PW-14, 1 story, 54x58 ft. 18 ft. high police radio station addn. on Belle Isle. Plans deposit $10.

**Mich., St. Louis**—BA 2/17—City, Kenneth V. Barnum, clk., sewerage sys., 7,600 ft. 8- to 18-in. intercepting mains, 950 ft. 10 in. c.i. sewage force main, sewage pumping station, sewage treatment plant. $535,000. Plans deposit $25, refundable. Ayres, Lewis, Norris & May, 500 Wolverine Bldg., Ann Arbor, engrs. CD 11/9.

#### BIDS ASKED—BUILDINGS

**Mich., Wyandotte**—SCHOOL—BA 2/14—City, Bd. Educ., William Howard Taft School. $430,000. Plans deposit $50, refundable. Bennett & Straight, 15624 Michigan Ave., Dearborn, archts. CD 6/22.

**Ill., Evanston**—SCHOOL—BA 2/15—St. Mary's Parish, c/o Childs & Smith, archts., 20 N. Wacker Dr., Chicago, Zone 6, 3 story grade school. $750,000.

**Mich., Royal Oak**—CHURCH—BA 2/15—Harold H. Fisher & Assoc., archts., 1605 Industrial Bank Bldg., Detroit, church for First Congregational Parish, 130 W. Third St., Royal Oak, Mich. $500,000. CD 11/18/53.

#### SOON LETS CONTRACT—BUILDINGS

▲ **Ill., Chicago**—APARTMENTS—Herbert S. Greenwald, 135 S. La Salle St., Zone 3, soon lets contract, four 27 story apartments, two at 67x109 ft., and other two at 67x171 ft., Sheridan and Diversey Blvd. $10,000.000. Friedman, Alschuler & Sincere, 223 W. Jackson Bldg., Zone 6, archts. CD 10/13.

**Ill., Chicago**—SCHOOL—St. Sylvester Parish, 2157 Humboldt Blvd., soon lets contract, brick, stone school. $700,000. Meyer & Cook, 1915 Lincoln Ave., archts.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ **INDIANA**—State Hy. Comn., Indianapolis,
**Arcole-Midwest Corp.**, 3225 Main St., Skokie, Ill., CA **$811,516,** exten. Ind. 420 Tri-State Highway in Gary just west of Oak Wood Dr. to about ¼ mi. west of Clark Rd., Lake Co.;
**Moellering Constr. Co.**, 241 Murray St., Fort Wayne, Ind., CA, **$632,348** 5 mi. U. S. 27 from just northwest of Hoagland Rd. to about ½ mi. northwest of Maples Rd. south of Fort Wayne, Allen Co.;
**Calumet Paving Co.**, Zionsville, Indianapolis, Ind. CA **$1,015,708** U. S. 31-E. and Ind. 62 from Municipal Bridge to Jeffersonville to just north of Kopp Lane and another roadway to McKinley and Brooks Ave. in Clarksville, Clark Co. CD 12/22, under LB.

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,
**W. E. O'Neil Constr. Co.**, 2751 Clybourn Ave., Chicago 4, Ill., CA, **$1,642,925.** Contract C 11/12, grading, structures, drainage, paving 2.5 mi. Constr. Sect. C-11/12, Indiana East West Toll Road, Lake Co. Bids Jan. 12, awarded Jan. 20. CD 1/14.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **P. & M. Construction Co.**, 545 N. Hague Ave., Columbus, O., CA Est. **$15,000,000.** 1,300 three-bedroom factory-built HOMES, 300-acres Livingston Ave. and Hamilton Rd. to be known as "Shady Lane Park", COLUMBUS, O. G. E. Bass & Co., 2715 N. State St., Jackson, Miss. H. G. Dill, 2607½ N. High St., Columbus, O., engr.

**B-W Constr. Co.**, 39 S. La Salle St., Chicago 2, Ill., CA, **$500,000,** general Robert E. Wood Memorial Boys CLUB HOUSE, 25 St. and Sacramento Blvd., CHICAGO, ILL. Chicago Boys Club, 123 W. Madison St., Chicago, Ill. Perkins & Will, 309 W. Jackson Blvd., Chicago 6, Ill., archts. Awarded Jan. 21. CD 1/25.

▲ **Meadow Lane Homes**, 7649 S. State St., Chicago, Ill. Own Forces, **$6,500,000,** 400 HOMES, sewers, paving, streets, curbs, walks and water lines, DOLTON, ILL. Fitch Schiller & Frank, 100 W. Chicago Ave., Chicago, Ill., archts.

**Jerome Constr. Co.**, 12681 Outer Dr., Detroit, Mich. Owner Builds. **$790,000.** nine 2 story, brick veneer multiple HOUSES, 96 units, Outer Dr., Lahser and Dolphin Sts., DETROIT, MICH.

▲ **J. A. Utley Co.**, 723 E. Ten mile Rd., Ferndale, Mich. CA Est. **$4,000,000.** 2 story body paint SHOP, East Jefferson St., DETROIT, MICH. Chrysler Corp., Chrysler Div., E. C. Quinn, pres., 20300 Mound Rd., Detroit, Mich. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., engr.-archt.

**Ferguson & Phillips**, Redford, Mich. CA Est. **$550,000.** Elementary SCHOOL, REDFORD, MICH. Redford Union School Dist. 1, 26440 Puritan St., Redford, Mich. Bids Dec. 15. CD 11/30.

**R. C. Hendrick & Sons**, 427 Atwater St., Saginaw, Mich. CA **$739,639.** general contract Intermediate SCHOOL, Norman and North 20 St., SAGINAW, MICH. City, Bd. Educ., 544 Millard St., Saginaw, Mich. CD 12/27, under LB.

## WEST OF MISSISSIPPI

#### BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 8 Iowa
STREETS AND ROADS
February 8 Iowa

**Neb., Omaha**—BA 2/8—Metropolitan Utilities Dist., 18 and Harney Sts., 4 suspended solids contact units of thirty mg d. capacity each at water treatment plant. $510,000. J. C. Detweiler c/o owner, water engr. CD 7/8/53.

▲† **North Dakota**—BA 2/15—U. S. Eng., Riverdale spillway basin, Garrison Dam and Reservoir Proj., Inv. 32-015-55-37. Extended date. CD 12/15.

▲† **Neb., Fort Crook**—SAC CONTROL CENTER—BA 4/4—U. S. Eng., 1709 Jackson St., Omaha, Zone 2, SAC Control Center: incl. 3 story rein.-con. control center and admin. bldg., incl. 3 level underground structure, Offutt Air Force Base. $8,000,000. Plans deposit $100. Leo A. Daly Co., 633 Insurance Bldg., Omaha, archt. CD 1/26.

#### BIDS ASKED—BUILDINGS

▲ **Minn., Fergus Falls**—HOSPITAL—BA 2/24——Lake Region Hospital, P. Hofstad, admin., Fergus Falls, hospital addn., $1,000,000. Plans deposit $25. Magney, Tusler & Setter, 303 Roanoke Bldg., Minneapolis, archts.

▲ **Minn., St. Joseph**—DORMITORY—BA 2/24—College of St. Benedict, St. Joseph, 3 story, 37x394 ft. dormitory, 1 story, 86x128 ft., commons bldg. $1,000,000. Hammel & Green, 186 Fairview Ave. N., St. Paul, archts. CD 8/2.

#### SOON LETS CONTRACT—BUILDINGS

▲ **Tex., Fort Worth**—SHOPPING CENTER—The Fair, L. R. Sarazan, Fair Bldg., soon lets contract shopping center $1,000,000; area paving, auto parking center pavement, $75,000. Extended date. J. N. Williams & Co., 1407 Akard St., Dallas, archt. CD 1/20.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,
**O. W. Swenson Constr. Co.**, 550 Snelling Ave., S. St. Paul, Minn. LB **$1,092,038.** grading, paving, 16.3 mi. between 0.6 mi. north of Hallock and St. Vincent Jct., Kittson Co.;
**Anderson & Sons, Inc.**, 100 N. Seventh St., Minneapolis, Minn. LB **$234,626.** grading, paving 1.4 mi. in Ada, Norman Co.;
**Hallett Constr. Co.**, Crosby, Minn. LB **$816,539.** grading, paving 13.3 mi. between Jct. TH 81 and Ada, Norman Co.;
**J. Brown Constr. Co. & E. Lundin**, Mankato, Minn. LB **$286,559.** grav. base, road mixed bit. surf. 27.6 mi. between Big Falls and Pelland, Koochiching Co.;
**Guffemos Constr. Co.**, Hudson, Wis. LB **$241,874.** grav. base, road-mixed bit. surf. 18.6 mi. between Manley and Jasper, Rock Co.;
**Ulland Bros.**, Austin, Minn. LB **$209,741.** grav. base, plant mixed bit. surf. 11.9 mi. between New Richland and 1.8 mi. east of Ellendale, Steele and Waseca Counties. Bids Jan. 21. CD 1/5.

† **Megarry Bros.**, St. Cloud, Minn. LB **$417,132.** grading, apron pavements Duluth Air Force Base, Inv. 25-066-55-44, DULUTH, MINN. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 21. CD 1/3.

† **Dickmann, Pickens & Bond**, Gazette Bldg., Little Rock, Ark., LB **$597,849,** est. $627,035 rehabilitation of Air National Guard facilities, Municipal Airport, ENG-03-050-55-74, FORT SMITH, ARK., U. S. Eng., P. O. Box 867, Little Rock, Ark. CD 3/4.

▲ **Northern States Power Co.**, 15 S. 5 St., Minneapolis, Minn. Own Forces. **$800,000,** install natural gas facilities for Fargo, Southwest Fargo, N. D. and Moorhead, Minn.; **$500,000,** install natural gas facilities in Grand Forks, N. D. and East Grand Forks, Minn., NORTH DAKOTA and MINNESOTA.

▲ **TEXAS**—State hy. Comm., Austin,
**Austin Bridge Co.**, P. O. Box 1590, Dallas 1, Tex., CA **$511,264,** base, b. conc. pavement and P. S. F. RR overpass 1.59 mi. hy. US 87, Proj. U 546 (22) Lubbock Co.;
**Cage Bros.**, 6959 San Pedro St., San Antonio, Tex., CA **$646,208.** flexible base, hot mix b. conc. 19.496 mi. Hy. US 80, Proj. IN 558 (15), Culberson and Jeff Davis Counties;
**H. L. Butler & Joe W. Hendrix & Sons & W. Paul Carlisle**, 6434 Orchid Lane, Dallas, Tex., CA **$1,171,281.** c. conc. pavement, stabil. shoulders 2.703 mi. Hy. US 67, Proj. C. 10-12 & 11, 14 & 29, Bowie Co. Grand total $2,328,753. Bids Jan. 21, awarded Jan. 24. CD 1/25, under LB.

▲† **Nilson-Smith Constr. Co.**, 800 2 St. S., Great Falls, Mont. and **Northwestern Engineering Co.**, 1311 St. Joe St., Rapid City, S. D. CA **$4,784,819.** airfield paving hangar at Great Falls Air Force Base, Inv. 55-85, GREAT FALLS, MONT. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. CD 1/12, under LB.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

**Regents of University of Minnesota**, C. A. Smith, purch. agt., Admin. Bldg., Main Campus, Minneapolis, Minn. rejected bids Jan. 5, Law School addn., MINNEAPOLIS, MINN. LB **$411,500.** Will re-advertise. CD 1/10, under LB.

▲ **Cedarloe Park Co.**, Decar Heights Dr. and Circle Dr., Cedar Rapids, Ia., Owner Biulds, **$3,000,000** SHOPPING CENTER, CEDAR RAPIDS, IA.

**W. C. Shelton Co.**, 1309 Gore Blvd., Lawton, Okla. LB **$518,700,** est. $500,000. SANCTUARY and EDUCATIONAL BLDG., LAWTON, OKLA. First Methodist Church, 202 S. 8 St., Lawton, Okla. CD 6/16.

**Henderson Clay Products Co.**, Henderson, Tex. Own Forces. **$600,000,** est. $500,000. PLANT expansion, HENDERSON, TEX. CD 10/7.

**W. S. Bellows Constr. Corp.**, Box 2132, Houston, Tex. CA, **$507,277,** OFFICE addn., HOUSTON, TEX. Southern States Life Insurance Co., Montrose and Hawthorne Sts., Houston, Tex. Bids Jan. 6. CD 1/20.

**W. D. Burkhard**, 2439 Robinhood St., Houston, Tex. Own Forces. **$348,316,** 15 DWELLINGS; **$646,100,** 21 DWELLINGS, HOUSTON, TEX. CD 11/4.

**M. & N. Constr. Co., Inc.**, 8406 Mosley St., Houston, Tex.. CA **$509,118 (E)** 40 masonry DWELLINGS; CA **$373,000 (F)** 34 frame, masonry DWELLINGS, HOUSTON, TEX. Ethelyn Corp., c/o Malcolm McCulloch, 2111 Jensen Dr., Houston, Tex. CD 7/28.

**Damon Wells**, 2107 McKinney St., Houston, Tex. cancelled bids WAREHOUSE, HOUSTON, TEX. Est. **$800,000.** CD 1/13.

**Arrington-Bradley Bldg. Co.**, 7445 Park Place Blvd., Houston, Tex., CA **$638,610,** Group 7, 21 DWELLINGS; Group 8, 14 DWELLINGS, 250-acre tract near Glenbrook Valley Subdivision, HOUSTON, TEX. Glenbrook Development Corp., 7445 Park Place Blvd., Houston, Tex. CD 12/2.

**Frank W. Sharp Constr. Co.**, 2201 Rosslyn St., Houston, Tex., CA **$377,190,** 33 DWELLINGS; CA **$344,150,** 28 DWELLINGS in exten. of Scenic Woods, HOUSTON, TEX. Frank W. Sharp, 3201 Oak Grove St., Houston, Tex. CD 6/4.

▲ **M. W. Kellogg Co.**, M. Esperson Bldg., Houston, Tex. CA Est. **$13,500,000.** fluid catalytic CRACKING PLANT, 68,000 bbl. daily capacity; CA Est. **$1,000,000.** gas treating unit;
**Arthur G. McKee & Co.**, 2300 Chester Ave. N., Cleveland 1, O., CA Est. **$11,500,000.** constr. CRUDE TOPPING AND VACUUM PLANT UNIT, 100,000 bbls. daily capacity, PORT ARTHUR, TEX., Grand Total, $26,000,000. Gulf Oil Corp., Port Arthur, Tex. CD 1/26.

## FAR WEST

#### BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 17 California

#### BIDS ASKED—BUILDINGS

**Wash., Kennewick**—SCHOOL—BA 2/15—School District 17, High School Bldg., Kennewick, 41,200 sq. ft., rein.-con., masonry Hawthorne Elementary School, $500,000. Plans deposit $25. J. S. Villesvik, 109 N. 3 St., Yakima, archt. CD 9/27.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

**NEVADA**—State Hy. Dpt., State Office Bldg., Carson City,
**Wells Cargo, Inc.**, D-4-C Rd. & UP R.R., Las Vegas, Nev., CA **$689,858,** constr. portion of State Highway System, Fifth St. in Las Vegas between Oakley Blvd. and

junction Main St., Rte. Sect. 005-1, Control Sect. CL-03, Proj. No. F-005-1 (3), State Hy. Contr. No. 910, Clark Co. Bids Jan. 20. CD 1/12.

† **Leslie Elson Co.**, 130 S. 4 St., Las Vegas, Nev., CA **$571,432**, structures and facilities, Nevada Proving Ground, LAS VEGAS, NEV. Atomic Energy Comn., 1235 S. Main St., Las Vegas, Nev. Awarded Jan. 20. CD 11/17, under LB.

**WASHINGTON**—State Hy. Comn., Olympia,
**Peter Kiewit Sons Co.**, Box 491, Longview, Wash., CA **$694,914**, rein.-con. box girder structure over South Bay on 0.248 mi. Secondary State Hy. 13-A, Grays Harbor Co. Bids Jan. 11. CD 1/5.

▲ **WASHINGTON**—State Hy. Comn., Olympia,
A. V. **Phillips**, 4055 21 Ave. W., Seattle, Wash., CA **$1,272,990**, upper sections of main bascule piers for 1 Ave. S. Bridge in Seattle, with spans to span on each of Duwamish Waterway, King Co. Bids Jan. 18. CD 1/21, under LB.

▲ **Morrison-Knudsen Co., Inc.**, 319 Broadway, Boise, Idaho. LB, **$2,407,076**, est. $2,550,785, grading, installing 16 mi. railroad track on Washington shore of Columbia River near The Dalles Dam, WASHINGTON, Spokane, Portland & Seattle Ry. Co., C. F. Thomas, ch. engr., 1101 N.W. Hoyt St., Portland 7, Ore.

▲† **Morrison-Knudsen Co., Inc.**, 319 Broadway, Boise, Idaho, CA **$4,797,802**, airfield paving and lighting, Fairchild Air Force Base, Inv. 55-86, SPOKANE, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash. Bids Jan. 14. CD 1/20, under LB.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,
**Griffith Co.**, 1060 Broadway, Los Angeles, Calif. LB, **$2,817,519**, grading, c. conc. 2.7 mi., constr. bridges, Santa Ana Freeway between Lewis St. and Broadway, Orange Co. CD 1/11;
**Daley Corp.**, Box 4067, San Diego, Calif., LB, **$609,849**, grading, plant mix on imported base material surf. and c. conc. 3.5 mi. between Alvarado Canyon Rd. and Brockton St., San Diego Co. Bids Jan. 20. CD 1/4.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento,
**M. J. B. Constr. Co. and Lord & Bishop**, 322 Elks Bldg., Stockton, Calif. LB, **$1,036,230**, grading, c. conc. paving, 3.4 mi., constr. 4 bridges, between Jahant Rd. and 0.5 mi. N. of Sacramento Co. line, San Joaquin and Sacramento Counties;
**John Delphia**, P.O. Box 313, Patterson, Calif., LB, **$476,821**, grading, plant mix surf. 2.9 mi. and constr. welded steel girder bridge between 1 mi. W. and 2 mi. E. of Estrella River, San Luis Obispo Co. Bids Jan. 19. CD 1/4.

**CALIFORNIA**—State Div. Hys., P. Wks. Bldgs., Sacramento,
**Transocean Eng. Corp.**, 7807 Russell City Road, Hayward, Calif., CA **$547,527**, grading, plant mix on untreated base surf. 4.4 mi. Ygnacia Valley Road exten. between Oak Grove Rd. and Clayton Rd. near Concord, Contra Costa Co. Bids Jan. 5, awarded Jan. 17. CD 1/18, under LB.

▲ **Chas. J. Rounds**, 4529 Alger St., Los Angeles, Calif., CA **$1,143,101**, Proj. 5, Alhambra-Monterey Park Storm Drain, Alhambra and Monterey Park, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Jan. 7, awarded Jan. 18. CD 1/17, under LB.

† **A. Teichert & Son, Inc.**, 1931 Stockton Blvd., Sacramento, Calif., LB, **$826,480**, strengthen NE-SW runway, 4R-22L, Mather Air Force Base, ENG-04-167-55-25, SACRAMENTO, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Jan. 18. CD 1/5.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **H. C. Crittenden Constr. Co.**, 112 E. Alvarado St., Phoenix, Ariz. Owner Builds, **$2,500,000**. 300-HOME subdivision, PHOENIX, ARIZ.

**Cherf Bros., Inc. & Sand Kay Contractors, Inc.**, Ephrata, Wash., LB **$713,310**, general contract 44,600 sq. ft. 2 story, bsmnt., rein.-con., steel court house, ELLENSBURG, WASH. Kittitas Co., Court House, Ellensburg, Wash. Bids Jan. 18. CD 12/29.

▲ **Hahn-St. John**, 219 S. Hawthorne Blvd., Hawthorne, Calif. Owner Builds, **$1,880,000**. 121 stucco DWELLINGS, Placentia Ave. in Tract 2205, ANAHEIM, CALIF.

▲ **Montex Constr. Co.**, 9304 Santa Monica Blvd., Beverly Hills, Calif. Owner Builds. **$1,563,000**. 166 frame, stucco DWELLINGS, Crewe, Everest and Gettysburg Sts., BELLFLOWER, CALIF. Hudson & Brockow, 2428 W. Olympic Blvd., Los Angeles, Calif., archts.

▲ **Beverly Gardens**, 144 S. La Brea St., Los Angeles, Calif., Owner Builds, **$2,600,000**, 234 stucco DWELLINGS, Tract 2234, GARDEN GROVE, CALIF. Wm. G. Chandler, 7411 Beverly Blvd., Los Angeles, archt. CD 12/2.

▲ **Myers Brothers**, 3407 San Fernando Rd., Los Angeles, Calif., CA **$1,194,000**. 5 story, 68,000 sq. ft., rein.-con. OFFICE, LOS ANGELES, CALIF. California Teachers Assn., 612 S. Figueroa St., Los Angeles, Calif. Bids Jan. 6, awarded Jan. 14. CD 1/12, under LB.

▲ **A. L. Gindling**, 2960 Wilshire Blvd., Los Angeles, Calif., Owner Builds, **$1,145,000**, 135 frame, stucco DWELLINGS, Orange, Becker and Sandria Sts., PUENTE, CALIF.

## CANADA

#### BIDS ASKED—BUILDINGS

**Ont., Barriefield**—GARAGE, etc.—BA 2/15—Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, 40-vehicle garage and utilities at Canadian Army Base, About $500,000. Plans deposit $100.

**Ont., Petawawa**—ADMINISTRATION—BA 2/22—Defence Constr. Ltd., 56 Lyon St., Ottawa, administration bldg., lecture training bldg., barrack block, and guard house, Army Station $600,000. Plans deposit $100. CD 12/15.

**Sask., Regina**—NURSING HOME—BA 2/28—Dpt. P. Wks., Parliament Bldgs., superstructure on nursing home over $600,000. Plans deposit $75. Stock, Ramsay & Assocs., 1745 Scarth Rd., archts. CD 1/12.

▲ **Alta, Medicine Hat**—HOSPITAL—BA 3/1—Medicine Hat Hospital Bd., Medicine Hat, hospital, Prospect Dr. subdivision, $2,000,000. Rule, Wynn & Rule, 513 8 Ave. W., Calgary, Alta., archts. CD 11/12/53.

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ **BRITISH COLUMBIA**—British Columbia Toll Hys. & Bridges Auth., Victoria,
**Western Beridge & Steel Fabricators Ltd.**, 145 W. 1 Ave., Vancouver, B. C., CA, **$1,134,925** fabrication, supply delivery and erection of steel work, for truss spans for the Agassiz-Rosedale bridge proj. Bids Dec. 15, awarded Jan. 18. CD 12/29, under LB.

**Lambton County Council**, County Bldgs., Sarnia, Ont., Own Forces, **$470,000**, new pavements, gravel resuf. bridges and culverts, new section of Lake Shore Rd., general maintenance, SARNIA, ONT. D. B. Gardiner, County Bldgs., Sarnia, engr. Awarded Jan. 22. CD 6/25/53.

▲ **QUEBEC**—Public Works Dpt., Parliament Bldgs., Quebec City,
**Dufresne Constr. Co. Ltd.**, 1832 Blvd Pie IX, Montreal, Que., CA, **$1,000,000**, bridge over Bersimis River between Seven Island and Baie Comeau, CD 1/11; CA, **$1,000,000**, replacing present Yule Bridge over Richelieu River at Chambly Canton. Olivier Desjardins, c/o owner, ch. bridge engr. Awarded Jan. 10.

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **J. A. Greene**, 1118 82 Ave., Edmonton, Alta., CA Est. $1,200,000. SCHOOL for the Deaf, EDMONTON, ALTA. Alberta Govt., Parliament Bldg., Edmonton, Alta. R. Clarke, M.R.A.I.C., Dpt. P. Wks., ch. archt. CD 3/10.

**C. J. Oliver Ltd.**, 6660 Howe St., Vancouver, B. C., CA **$500,000**. SUPER MARKET Kingsway and Edmonds St., BURNABY, B. C. Canada Safeway Ltd., 840 Cambie St., Vancouver, B. C. Polson & Sidall, 1161 Melville St., Vancouver, B. C., archts. CD 12/23/52.

▲ **Community Enterprises Ltd.**, 610 St. James St. W., Montreal, Que., CA, **$3,000,000**. HOUSING DEVELOPMENT incl. 300-units, SILVER FALLS, N. B. Camplain Heights Ltd., c/o contractor, Central Mortgage & Housing Corp., Ottawa, Ont., archts. Awarded Jan. 10.

▲ **Fluor Corp. of Canada Ltd.**, 200 Bloor St. E., Toronto, Ont., CA, **$1,000,000**. asphalt refining and mfg. PLANT, 70-acre site, FORT WILLIAM, ONT. Husky Oil & Refining Ltd., Bamlett Bldg., Calgary, Alta. Awarded Jan. 21. CD 11/9.

**Camston Ltd.**, 2916 Bloor St. W., Toronto, Ont., CA, **$600,000**. 1 story, 70,000 sq. ft., steel, brick PLANT, Greenbelt Dr. in Don Mills Development TORONTO, ONT. Parker Pen Co. Ltd., 154 University Ave., Toronto, Ont. Mendelow & Keywan, 1398 Eglinton Ave. W. Toronto, Ont., archts. A. Tobias, 24 Cecil St., Toronto., Ont., engr. CD 1/12.

▲ **Foundation Co. of Canada Ltd.**, 1900 Sherbrooke St. W., Montreal, Que. CA **$9,000,000**, 750-800 semi-detached houses, 12 models in HOUSING DEVELOPMENT, SHOPPING CENTER, park and swimming pool, near BOUCHERVILLE, QUE. Brogel Constr. Ltd., Aldred Bldg., Montreal, Que. Peter Ackers & David G. Woods, 4115 Sherbrooke St. W., Montreal, Que., archts. CD 11/23, under CA.

▲ **Armayah Gardens Ltd.**, c/o Henry Sassoon, 124 Dorval Shopping Center, Dorval, Que., CA, **$30,000,000** RESIDENTIAL DEVELOPMENT, incl. 3,000 housing units and 44-unit shopping center, parks, etc., near HUNTINGDON, QUE. Montreal Consolidated Development Ltd., Dorval, Que.

▲ **Almazah Gardens Ltd.**, Henry Sassoon, 124 Dorval Shopping Centre, Dorval, Que., Owner Builds, **$1,700,000**, 300 houses, in HOUSING DEVELOPMENT on new streets in STE. ROSE, QUE.

## ALASKA

### HEAVY CONSTRUCTION

#### LOW BIDS AND CONTRACTS

▲ † **Grove, Shepherd, Wilson & Kruge, Inc.**, 247 Park Ave., New York, N. Y. LB **$1,165,940**, est. $1,210,459, 9,200 sq. ft. theater, 8,400 sq. ft. flight-simulator bldg., 12,500 sq. ft. maintenance shop for Army items, 15,900 sq. ft. post exchange and 8,500 sq. ft. armament and electronics shop, Inv. 55-49, Ladd Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Jan. 20. CD 1/11.

## LATIN AMERICA

### BUILDINGS

#### LOW BIDS AND CONTRACTS

▲ **Intercontinental Hotels Corp.**, 41 E. 42 St., New York 17, N. Y. Separate Contracts. 120-room HOTEL to be called El Curacao on site at entrance to Willemstad Harbor, CURACAO, NETHERLANDS WEST INDIES. Richard S. Smith & Joseph Salerno, c/o owner, archt.

(Proposal Advertisements see pp. 75 to 77)

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# Washington Tightens Credit for Construction

### Treasury moves into the long-term money market. That means it's competing with borrowers of construction funds

The Treasury moved last week to tighten up the supply of long-term money that goes into mortgages and bonds financing construction. Its action will tend to check the homebuilding boom and will make money for public works and corporate construction a little harder to come by. The Treasury also hopes to check flow of funds into the booming stock market.

To holders of $2.6 billion of 20-year bonds maturing in March, the Treasury will offer a new 40-year 3% bond. Holders of the maturing issue can take a 13-month Treasury note instead, or cash if they prefer. But opinion around Wall Street is that around $2 billion or more of the new long-term bonds will be issued. Life insurance companies, pension funds, savings banks, and other investors who want very long-term investments will want the new bonds.

The result will be that less money will be available for mortgages and long-term issues of corporations and local governments. Mortgage terms are apt to stiffen a little.

• **Change of policy**—This is the longest-term bond the Treasury has offered since before World War I. And it is the first long-term issue since Secretary of the Treasury George Humphrey offered $1.6 billion of 3¼% bonds back in the spring of 1953—the famous "Humphrey Dumpties." That issue did much to check a rising credit inflation—in fact, it was partly responsible for demoralizing the bond and mortgage markets for awhile. The danger of inflation disappeared and in the following months the economy started to move into a recession. So the Treasury and the Federal Reserve Board adopted a policy of "active ease" which continued until recently.

Now the Treasury again offers a long-term bond—a move that fits into its long-range program of lengthening the average maturity of the national debt. But Treasury officials emphasize that this bond is different. They point out that the 1953 offering was mostly for cash, while this year's issue is part of a refunding. They argue that exchange of a new long-term bond for a maturing long-term bond (this one was issued in 1935) doesn't shrink the supply of long-term investment funds.

• **Actual practice**—However, as a matter of practice many holders of long-term bonds don't wait for a long-term investment to mature. As it nears maturity, they often sell to investors who are interested in short-term securities. Actually, most of the $2.6 billion of maturing bonds are owned by commercial banks, who definitely do not want a 40-year bond. These banks will sell many of the maturing securities—which carry the right of refunding into the new bond—to investors who want the bond.

In turn, those long-term investors will sell other securities they now own, or draw upon available cash that otherwise might well have been invested in mortgages or other "construction securities." So this definitely will restrict the supply of long-term funds for construction.

• **Bet on prosperity**—Obviously, the Administration is betting that 1955 is going to be a prosperous year. But doesn't want prosperity to become a runaway inflation. It does not want homebuilding this year, for instance, to be at the expense of housing starts in 1956 and 1957.

If business turns down later this year—for instance, if home starts decline or total construction volume falls off—the Treasury and the Federal Reserve unquestionably will take steps to ease credit again. But if the present general business boom continues to pick up speed, further deflationary moves can be expected.

• **Balance wheel**—The Administration's policy is to try to keep economic forces from getting out of hand in either direction. During the recession, it tried to keep money easy and encourage borrowing. That policy worked because people in general had confidence that the recession would be temporary. Now, by moving to "cut the top off the boom," the Administration seeks to prevent a deep valley of recession when the time of readjustment comes.

## North Carolina Governor Blocks New Financing Plan by Highway Board

North Carolina's Gov. Luther P. Hodge has turned thumbs down on the State Highway and Public Works Commission proposal for a $150-million bond issue to finance better highways. He feels the commission has not yet proved that the bond issue is needed now. And he wants to see the commission operate "as an integral part of state government and not as a separate enterprise."

Working from a report by Parsons, Brinckerhoff, Hall and Macdonald, the commission had proposed that North Carolina spend $610 million during the next six years on highway improvement. In addition to the bond issue, it proposed higher gasoline and truck taxes.

Hodges noted that the commission was now responsible for about one-third of state spending. "State budget officials," he said, "ought to know more about the highway management and its plans, both current and long-range. The Highway Commission should submit its budgets in the same detail that is - required of all other agencies."

The governor said that after conference with the Highway Commission he was still in the dark as to why it had adopted the Parsons-Brinckerhoff estimates of future traffic and gasoline-tax revenue, rather than its own independent estimates, which were higher.

He also noted that the commission is unable to allow for possible increased federal aid because of the uncertain status of the federal highway program at this time.

Hodges argued that such factors are "bound to have a substantial bearing on the kind of highway program the state can afford and on the amount and kind of highway tax increases, if any, that will be needed."

Gov. Hodges also is asking the legislature to help him work out "means whereby the Highway Commission will be encouraged to function as an agency dealing with the highway needs of the state as a whole and not as 14 more or less autonomous units. Until this takes place," said he, "we are not likely to have long-range planning or state-wide highway construction."

# Milwaukee Shopping Center Will Be Financed by New Plan

The familiar sell-leaseback device has developed a new twist. This financing method has seldom been applied to finance construction of shopping centers. But Ed. Schuster & Co., which operates three sizable department stores on the edge of Milwaukee's downtown area, decided to try a modified version in financing Capital Court Shopping Center around a projected suburban branch.

Schuster's wanted plenty of other stores around its branch, to attract customers. But it didn't want to tie up its assets in their brick and mortar. So Schuster's worked out an unusual deal with Massachusetts Mutual Life Insurance Co. through the local investment house of Robert W. Baird & Co., Inc., and New York's Goldman, Sachs & Co. Details were announced last week.

• **Normal sell-leaseback**—Under the usual sell-leaseback ararngement, a company wishing to finance a building will sell it to an investor after completion and then take a long-term lease. The rental is set at a level which amortizes the building and provides an income to the investor. Usually, there is an option to renew the lease at a nominal rental. The sell-leaseback has the advantage of freeing the tenant's assets for working capital. And the lease obligation doesn't show on his balance sheet, as a long-term mortgage would.

Here's how Schuster's deal worked out: First, to put up its own branch store at Capital Court and provide fixtures and working capital, Schuster's sold $2.5 million of 4% promissory notes to Northwestern Mutual Life Insurance Co. A subsidiary borrowed $3.5 million from the same investor on a 25-year mortgage.

Then another subsidiary, Capital Court Corp., arranged for a profit-sharing leasehold improvement contract with Massachusetts Mutual. This is the unusual aspect of the deal.

• **New variation**—When the center is finished, the insurance company will buy all of the satellite stores, parking facilities, and other common areas, at cost up to a maximum of $6 million. There will be about 60 other stores, with parking space for over 5,000 cars. Schuster's will continue to own its branch store. Its subsidiary, Capital Court Corp., will continue to own the land for the whole project, and will lease the land to Massachusetts Mutual. As rental, it will get a share of the profits from the operation of the center. The insurance company will take on Schuster's as manager of the center. At the end of a long-term lease with a renewal option, the buildings revert to Schuster's.

• **Investor advantages**—What's in this deal for the insurance company? Over a period of 27 years, it gets all profits from the real estate operation of the center up to a fixed level. If earned, this annual fixed level will amortize the original investment and yield a fair return. This claim on profits becomes cumulative if not earned in any year.

Above this level, Massachusetts Mutual shares profits with Schuster's Capital Court Corp. This share is the payment Schuster's gets for use of its land. After original cost is amortized, the insurance company continues to share all profits with Schuster's.

Obviously, Massachusetts Mutual wouldn't go into the deal if it didn't expect to get its money back with a good return. It must approve the tenants' credit ratings. The leases will, in general, be the usual shopping-center arrangement of a fixed minimum rental plus a certain percentage of the sales.

## Home Designer Is Successful In Suit to Defend Copyright

**The right of an architect to copyrighted architectural plans and drawings has been upheld by a Federal District Court in California. Cliff May and Christian E. Choate, of Los Angeles, designers of Cliff May Homes, were given a permanent injunction against William M. Bray, Bristol Development Co., and Federated Construction Co. This is believed to be the first time an architect has successfully enforced his copyright.**

**U. S. District Judge William Byrne held that architectural drawings used by the defendants in a residential tract at Santa Ana, Calif., are "substantially copies" of drawings copyrighted by the plaintiffs. The court held that the houses in the Santa Ana development "are so similar in appearance to Cliff May Ranch Houses as to mislead the public."**

**Judge Byrne forbid the defendants from unauthorized printing or selling of the copyright drawings, and from building houses "which substantially imitate plaintiff's unique combination of designs, features, materials, methods and technique."**

## State Legislatures Think About Higher Highway Taxes

Several state legislatures are currently considering ways and means to increase income for highway construction and maintenance.

In Indiana, Rep. Ora Kincaid will introduce a bill to boost the state gasoline tax from 4 cents to 6 cents a gallon, in spite of Gov. George N. Craig's stand against boosting taxes. The present tax yielded about $53 million in 1954. Kincaid said his bill would continue the same distribution formula of 53% to the State Highway Department, 32% to counties, and 15% to cities.

Kincaid plans a companion bill to adjust the proposed tax boost to the possibility of the state's receiving more federal funds as credit for modernization of the part of the interstate highway system that lies on the Indiana Turnpike. This is part of the Clay committee proposal.

• **Toll-road credit**—If credit were allowed for toll roads, says Kincaid, the gas tax would be cut from 6 cents to 5 cents per gallon. Revenue from the fifth cent would be split, two-thirds going to the counties and one-third to cities and towns. Increased federal aid would be used only for state highways.

• **West Virginia**—In West Virginia, Gov. William C. Marland has asked for new highway-user taxes that would yield about $21.6 million. He wants 2 cents tacked on to the present 5 cents per gal gas tax, (producing about $11.2 million more); higher taxes on trucks ($4.6 million); higher license and registration fees ($5 million); and a higher diesel fuel tax ($800,000). He also suggested that responsibility for some road construction be shifted back to the counties.

• **North Dakota**—In North Dakota, a bill is being considered that would place a ton-mile tax on heavy trucks. The levy would be figured on the basis of gross weight and the number of miles traveled on North Dakota highways. This tax would not apply to

(*Continued on page 72*)

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- **Other states**—In Iowa, a new bill would boost the state gas tax from 5 cents to 7 cents per gal., while another would make permanent the temporary 1-cent boost enacted in 1953. In Kansas, a bill would extend the fifth cent in the state gas tax for another two years. Revenue from this part of the tax would be used for secondary road improvement.

## Illinois Toll Road Financing Still Delayed by Lawsuit

Though a federal court last week threw out the suit by which property owners sought to block the Illinois toll-road program, the state's Turnpike Commission is now waiting to see whether the plaintiffs will appeal to the Supreme Court. They have 60 days after Feb. 4 in which to file an appeal.

If there is an appeal, according to commission spokesmen, it would probably delay start of construction until next year. The $390-million financing, which would be the biggest single toll-road issue yet, cannot proceed until litigation is cleared up.

## Levitt to Build Another Town In Booming Delaware Valley

Another Levittown is scheduled to join Levittown, Long Island, and Levittown, Pa., within a few years. Last week, builder William Levitt confirmed rumors that he had assembled a 3,500-acre tract in New Jersey, across the Delaware River from his current development in Bucks County, Pa. It's about midway between Trenton and Camden.

Levitt says that it will be at least three years before he starts building homes on the new tract. He still has about 6,000 houses to go at Levittown, Pa., which is projected at 17,000 units, in addition to schools and other civic facilities.

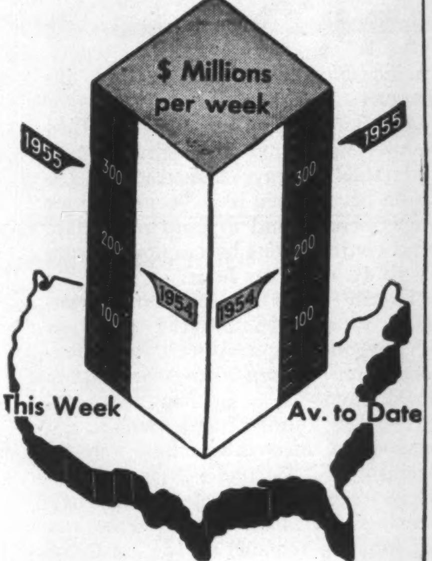
## Business Briefs . . .

- **Standard Oil of California** plans to spend about $100 million for construction in 1955. The money will go for new refinery capacity, for building and rehabilitating service stations and warehouses, for new marine drilling equipment, and for detergent and wax processing facilities.

- **Newsprint mill**—International Paper Co. plans a $20-million newsprint mill at an undisclosed southern location.

# Activity This Week

**As reported to ENR**
**(In millions of dollars)**



### Amount of contracts let

| | This Week | Cumulative 5 wks 1955 | Cumulative 5 wks 1954 | % chge |
|---|---|---|---|---|
| Federal ....... | $30.5 | $193.7 | $96.4 | +101 |
| State and municipal ... | 66.7 | 392.5 | 397.9 | −1 |
| Total public.... | 97.2 | 586.2 | 494.3 | +19 |
| Total private... | 182.7 | 989.0 | 466.3 | +112 |
| U. S. total..... | $279.9 | $1,575.2 | $960.6 | +64 |

### Contracts by type of work

| | This Week | 1955 | 1954 | % chge |
|---|---|---|---|---|
| Waterworks .... | $3.1 | $32.0 | $17.5 | +83 |
| Sewerage ...... | 5.9 | 28.2 | 25.4 | +11 |
| Bridges ....... | 8.9 | 45.4 | 33.4 | +36 |
| Highways ...... | 36.4 | 155.1 | 130.3 | +19 |
| Earthwork, waterways ... | 3.1 | 37.9 | 30.3 | +25 |
| Buildings: | | | | |
| Public, excl. hsg. ...... | 12.5 | 173.8 | 154.1 | +13 |
| Housg., public. | ... | 4.1 | 23.4 | −82 |
| Housg., private | 127.1 | 569.5 | 232.7 | +145 |
| Commercial .. | 14.8 | 111.4 | 85.7 | +30 |
| Industrial ... | 36.4 | 264.9 | 128.4 | +106 |
| Unclassified .... | 31.7 | 152.9 | 99.4 | +54 |
| Total ......... | $279.9 | $1,575.2 | $960.6 | +64 |

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

### New capital for construction

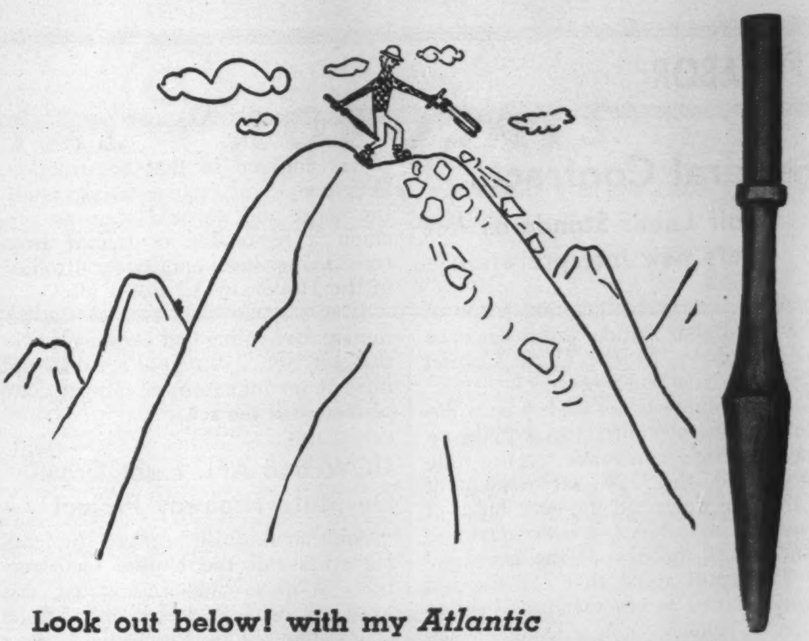
(millions of dollars)

| | Week of Jan. 27 1955 | Cumulative 4 wks 1955 | Cumulative 4 wks % chge '54-'55 |
|---|---|---|---|
| Corporate securities ..... | $85.3 | $231.0 | −9 |
| State and municipal: | | | |
| All except housing..... | 106.6 | 247.4 | +34 |
| Housing ............. | 20.4 | 31.0 | +201 |
| Federal loans .......... | ... | 8.0 | −40 |
| Federal aid ............ | ... | ... | ... |
| Total non-federal ....... | 212.4 | 517.5 | +12 |
| Federal appropriations: | | | |
| In U. S............. | ... | ... | ... |
| Outside U. S......... | ... | ... | ... |
| Total new capital........ | $212.4 | $517.5 | +12 |

### ENR cost and volume indexes, 1955

| | | Base years = 100 1913 | 1926 | 1949 |
|---|---|---|---|---|
| Construction cost ... | 1/27 | 645.62 | 310.35 | 135.34 |
| | 12/30/54* | 644.32 | 309.72 | 135.07 |
| Building cost ...... | 1/27 | 459.21 | 248.24 | 130.54 |
| | 12/30/54* | 457.91 | 247.53 | 130.17 |
| Volume ............ | Dec. | 464 | 189 | 134 |
| | Nov. | 522 | 212 | 151 |

* Official ENR index for Jan. 1.



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**DISTINTEGRATED RESERVOIR RESTORED BY CEMENT GUN CO. WITH "GUNITE"**

Climatic conditions had ruined the surface of this water storage reservoir at a Central Pennsylvania Institution. Cement Gun Company was called in to restore the structure with "Gunite." Photograph at left, above, shows our crew removing all of the disintegrated concrete prior to covering the wall with wire mesh. With reinforcing in place, "Gunite" was applied to bring the walls up to their original thickness (see photo above, right).

Complete information on many water storage reservoirs constructed or restored by Cement Gun Company are illustrated and described in our latest catalog, together with many other types of "Gunite" work we have done. A request, on your letterhead for catalog A2400 will bring your copy by return mail.

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**"GUNITE" CONTRACTORS**
GENERAL OFFICES — ALLENTOWN, PA., U. S. A.

MANUFACTURERS OF THE "CEMENT GUN"

## LABOR

# Federal Contracts

### Fair Labor Standards Act gets new interpretation

A decision extending the scope of the Fair Labor Standards Act has been handed down by the U. S. District Court in New Mexico.

Application of this act has been disputed by many contractors working on bases entirely controlled by the military. And, the U. S. Department of Labor has described the decision as of "major importance to workers and contractors throughout the country."

The court ruled that construction work relating to renovation and extension of runways at a federally owned airfield devoted to military use is within the scope of the act.

Principal question before the court was whether overtime should be paid on the basis of a 40-hour week, as required by FLSA, or on an eight-hour day, as stipulated in the contract. In this case, H. B. Zachry Co., of San Antonio, was treating as overtime only those hours worked in excess of eight per working day.

The military base at which the company is working is Holloman Air Force Base in Otero County, New Mexico. It is owned by the government, is a restricted area devoted to testing and research, and is not used by commercial lines. Repairs and extensions to existing runways and construction of a new runway are being done under government contract.

Though conceding the law's applicability presents an "extremely close question," the court held that the construction activities related sufficiently to interstate commerce to bring them within the scope of the act. The court relied heavily on the distinction between reconstruction of "instrumentalities of commerce" and new construction, and on the fact that daily military flights of an interstate nature take place at the field.

Dominant purpose of the act, the court said, is elimination of substandard labor conditions—not regulation of interstate commerce.

The court saw no merit in the company's defense of reliance on an opinion from the Office of the Solicitor of the U. S. Department of Labor, obtained when it was a subcontractor on construction of a jet fuel plant at the Bluebonnet Ordnance Works near McGregor, Texas. The opinion was that FLSA did not apply to employes engaged in that construction. Differences in factual backgrounds, the court said, "would seem to preclude a reasonable contractor from considering that opinion controlling in the Holloman Air Force job."

It was noted that even if the administrative ruling had been issued for this job, Sec. 259 of the act does not prevent an injuction to compel compliance with the act.

## UCW and AFL Fight Draw On State Highway Project

Another skirmish between the feuding AFL and the United Construction Workers was terminated last week. A consent decree ended legal action brought by the Nello J. Teer Co. of North Carolina, against three AFL locals, which were picketing its $3.7-million state highway project in Aliquippa, Pa., outside of Pittsburgh.

The terms of the decree bring some satisfaction to all. For Teer, work can now get underway. For the AFL, men hired in the future must be drawn from the local area. For UCW, there is no specification that new employes be members of AFL.

Source of the trouble was Teer's task force of 20 out-of-state UCW workers who moved into Aliquippa with heavy equipment on Jan. 3. Pickets, wearing placards of AFL laborers, operating engineers and excavators unions, barred them from starting work. Later, the pickets discarded the placards and claimed to be construction workers looking for jobs in a "depressed area" where local help was available.

The company, which has a contract with UCW and which is required by the terms of its contract with the state to hire unskilled labor from local sources insofar as possible, summed its position up this way: "We will, therefore, hire local labor as we need it. We will not, however, restrict such hiring to members of AFL unions."

The incident closely follows the AFL war plan against UCW drawn up at its September convention in Los Angeles (ENR Sept. 30, 1954, p. 25). UCW's Pennsylvania strongholds and heavy construction were then listed as primary targets.

## Two New Western Contracts Grant Wage, Welfare Hikes

Small hourly wage increases and a boost in welfare fund contributions highlight two new contracts for the Pacific Northwest construction industry.

In Portland, Ore., AFL's allied heavy construction and highway crafts and AGC's Heavy Construction Division have agreed to a 3-cent an hour wage increase and a jump in welfare fund contributions by employers from 7½ to 10 cents an hour.

Hourly wages under the new contract, covering 18,000 AFL members in Oregon and southwest Washington, are: tractor operators—$2.68; powdermen—$2.43; jackhammer operators—$2.28; gunnite nozzlemen—$2.63; heavy-duty mechanics—$2.68; shovel operators—$2.83 (under 5 cu yd) and $3.18 (over 5 cu yd); pile driving engineers—$2.78; oilers—$2.18. Premium for foremen remains at 12½ cents for small crews and 25 cents for large crews. These rates are exclusive of payments to the welfare fund. Rate for laborers is $2.13 (ENR Jan. 20, p. 82).

In Washington, Local 690 of the teamsters union and the Spokane and eastern Washington chapter of AGC have settled for a one-year contract. It grants a 5-cent an hour increase to teamsters employed by AGC contractors in eastern Washington and northern Idaho. New rates range from a low of $2.20 for drivers of bottom dump trucks to $2.75 for drivers of semi-truck trailers pulling full trailers.

## Teamsters Union Critical Of AFL-CIO Merger Plans

Last week Dave Beck, president of the powerful teamsters union, sounded an ominous note in the AFL-CIO merger negotiations.

He issued the warning that his union will oppose any unity plan prohibiting inter-union raids. The teamsters' position was announced at the mid-winter meeting of the union's executive committee at Miami Beach.

Beck maintains that other unions contain thousands of members who belong within the teamsters' jurisdiction. And he aims to prevent a freezing of this status. The union has been settling jurisdictional matters by agreements negotiated with individual unions and seeks to preserve its freedom to do so.

Although Beck declared his support for labor unity, he would not commit himself to go along with the majority of the AFL executive council. Most observers discount the possibility of a teamsters' break from the AFL as a result of the proposed merger—but Beck is leaving that door open.

# OFFICIAL PROPOSALS

**APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY. (Except for earlier holiday closing)**

(Continued on page 76)

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Bids: February 21, 1955

## Sub-Surface Investigation

NOTICE TO CONTRACTORS

Notice is hereby given that sealed bids or proposals, enclosed in sealed plain wrapper, bearing the appropriate identification, "Bid for Sub-Surface Investigations—Vly Creek Reservoir" will be received by the Board of Water Commissioners at its office in the Town Hall, Town of Bethlehem, Delmar, New York, at 7:30 P. M. Eastern Standard Time on the 21st day of February, 1955; and then will be publicly opened and read aloud at a meeting of the Board of Water Commissioners to be held the same day, subsequent to the time of receiving bids.

Copies of the plans and specifications may be examined at the office of the Town Clerk of the Town of Bethlehem, New York, 393 Delaware Avenue, Delmar, New York, or at the office of the Engineers, Benjamin L. Smith & Associates, 11 North Pearl Street, Albany, New York; copies thereof may be obtained from the Board and/or Engineers upon the payment of Five Dollars ($5.00) for each set of plans and specifications.

Proposals must be submitted on the blank forms provided and in a manner designated therein. Each proposal must be accompanied by a Bid Bond or certified check in an amount equal to Five Per Cent (5%) of the total bid. The Bid Bonds or Certified Checks of all but the three lowest bidders will be returned within three days after the opening of bids, while the remaining bonds or checks will be returned as soon as a contract has been executed. The Bid Bond or Certified Check of the successful bidder will be retained to pay any loss or damage to Water District No. 1 and/or the Town of Bethlehem in the event said successful bidder shall refuse or neglect to enter into a contract in accordance with his proposal. Acceptance of the bid will be contingent upon the fulfillment of this requirement by each bidder.

The Board of Water Commissioners reserves the right to consider bids for a period of Forty Days after their opening, and the right is reserved to reject all bids.

BOARD OF WATER COMMISSIONERS,
WATER DISTRICT NO. 1,
TOWN OF BETHLEHEM, NEW YORK.
BY: HAROLD C. BARKHUFF, Chairman

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Bids: February 15, 1955

## State of New Jersey State Highway Department Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 4(1927) RT. U.S. 9(1953), SECTION 23-A, and ROUTE 4(1927) RT. U.S. 9(1953), SECTION 38-A

Route 4(1927) Rt. U.S. 9(1953), Section 23-A, from Silverton Road to White Oak Bottom Road; Drainage Improvement, Dover Township, Ocean County, and Route 4(1927) Rt. U.S. 9 (1953), Section 38-A, from Toll Gate Corner to Elton Road; Shoulder Widening, Freehold Township, Monmouth County. Length 1.694 miles. The principal items of work are:

Estimated:

| | | |
|---|---|---|
| 5,202 | cu. yds. | Roadway Excavation-Earth |
| 1,219 | sq. yds. | Pen. Gravel Surface Course |
| 6,000 | sq. yds. | Reconstructed Gravel Surface Course |
| 2,650 | cu. yds. | Road Gravel |
| 2,832 | lin. ft. | Rein. Conc. Culvert Pipe, various sizes |
| 1,226 | lin. ft. | Corrugated Metal Culvert Pipe, various sizes |
| 22 | | Inlets and Manholes |

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, February 15, 1955, at TEN o'clock (10:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished upon payment of a fee of TEN DOLLARS ($10.00) which will not be refunded for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. with a check drawn to the order of the State Highway Department. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

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Bids: February 23, 1955

## Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a. m., Eastern Standard Time, the 23rd day of February 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of the T. J. Evans Tunnel, Section 36DE, part of the Northeastern Extension of the Pennsylvania Turnpike in Lehigh and Carbon Counties, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point approximately 2,703 lineal feet northwest of the center line of Legislative Route 39119 at Turnpike Station 1342+50 in Washington Township, Lehigh County; thence in a northwesterly direction 4,641.69 lineal feet through an equality at the County Line, to Turnpike Station 35+12.56 equals 1388+91.69 at a point approximately 4,282 lineal feet southeast of the center line intersection of the Turnpike and the Lehigh and New England Railroad in East Penn Township, Carbon County, a distance of approximately 0.88 miles.

The approximate quantities of the principal items are as follows:

| | |
|---|---|
| Class I Excavation | 180,000 cu. yds. |
| Rock Excavation in Tunnel | 132,000 cu. yds. |
| Steel Supports and Appurtenances | 1,300,000 lbs. |
| Portland Cement | 78,000 bbls. |
| Concrete—Tunnel Lining | 27,000 cu. yds. |
| Tunnel Ceiling | 2,850 cu. yds. |
| Tunnel Sidewalk, etc. | 2,000 cu. yds. |
| Reinforcement Bars | 1,900,000 lbs. |
| Wall Tile | 126,000 sq. ft. |
| Ceiling Tile | 124,000 sq. ft. |
| Reinforced Concrete Pavement | 11,600 sq. yds. |

Copies of plans, specifications and other contract documents, including cross-sections, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 28 January 1955. Plans, specifications, cross-sections and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy.

Plans and contract documents, for this section exclusive of specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty-five (25) dollars for each set. Cross-sections for Class I Excavation will be furnished with plans without additional charge, if requested. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE
COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
24 January 1955

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Bids: February 15, 1955

## Kansas City, Missouri

NOTICE TO CONTRACTORS

Missouri River Bridge at Broadway, Kansas City, Missouri, Contract No. 2—Three River Spans—Superstructure Metalwork Fabricate, erect and paint 5300 tons of Structural Steel. Bids to be received by Director of Public Works, 20th Floor, City Hall.

2:00 PM Tuesday February 15, 1955

Plans available at Howard, Needles, Tammen & Bergendoff, 1805 Grand Avenue, Kansas City, Missouri. Price $20.00.

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## U. S. Government

Sealed bids will be received in the office of Engineering and Construction Director, Panama Canal Company, Balboa Heights, Canal Zone, until 10:00 A.M., EST, March 11, 1955 for furnishing all labor, equipment, material and performing all work required for alteration of Gatun Hydro-electric Station and outdoor switchyard; conversion of station service, penstock headgate, spillway equipment from 25 to 60 cycle; construction of a new control room; purchase and installation of new transformers, metal clad switchgear and associated bus duct. Plans and specifications are available for examination in the office of Procurement Officer, Panama Canal Company, 21 West St., New York 6, N. Y., and copies may be obtained upon payment of $40.00 deposit. For further information call Bowling Green 9-5380.

## OFFICIAL PROPOSALS

(Continued from preceding page)

Bids: February 15, 1955

### State of New Jersey State Highway Department Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for

ROUTE 27 (1927), SECTION 20

Route 27 (1927), Section 20, from Woodbridge Avenue to Bridge Street; Pavement Widening in the Borough of Highland Park, Edison Township, and Borough of Metuchen, Middlesex County, Federal Project No. U-15(2). Length 3.468 miles. The principal items of work are:

Estimated:

| | | |
|---|---|---|
| 18,900 | cu. yds. | Roadway Excavation—Earth |
| 3,064 | sq. yds. | Pavement Excavation |
| 10,200 | cu. yds. | Subbase |
| 6,537 | sq. yds. | Pen. Gravel Surface Course, 2" thick |
| 6,500 | sq. yds. | Gravel Base Course, 8" thick |
| 38,239 | sq. yds. | Macadam Base Course, 4" thick |
| 35,933 | sq. yds. | Pavement Type MA-BC-2, Bottom Course, 1½" thick |
| 103,878 | sq. yds. | Pavement Type MA-BC-2, Top Course, 1½" thick |
| 750 | tons | Pavement Type SP-1 |
| 15,192 | lin. ft. | Rein. Conc. Culvert Pipe, various sizes |
| 1,675 | lin. ft. | Corrugated Metal Pipe Arch, various sizes |
| 212 | | Manholes and Inlets |
| 18,478 | lin. ft. | 9" x 120" White Conc. Vertical Curb |

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. on Tuesday, February 15, 1955, at TEN o'clock (10:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement & statement of plan & equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P.L. 413, 82nd Congress, and is to be performed in accordance with the Required Provisions = Federal-Aid Contracts of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished upon payment of a fee of TEN DOLLARS ($10.00) which will not be refunded for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

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## OFFICIAL PROPOSALS

Bids: February 10, 1955

### Contract No. DP-2

DELAWARE RIVER PORT AUTHORITY
Administration Building
Camden, New Jersey

DEMOLITION AND REMOVAL OF BUILDINGS ON PORTIONS OF THE SITE FOR THE DELAWARE RIVER BRIDGE CONNECTING PACKER AVENUE, PHILADELPHIA, PENNSYLVANIA, AND GLOUCESTER, NEW JERSEY

Sealed bids will be received for Demolition and removal of buildings on portions of the site for the Delaware River Bridge connecting Packer Avenue, Philadelphia, Pennsylvania, and Gloucester, New Jersey, known as Contract No. DP-2, at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey, until 2:30 P. M., (Eastern Standard Time), Thursday, February 10, 1955, at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $5,000.00 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania, or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a performance and Labor and Materialmen's Bond in the sum of 100 per cent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
Executive Director

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Bids: March 3, 1955

### New Jersey Turnpike Authority

CONTRACT NO. PE-3

Proposals are invited for Contract No. PE-3 which involves grading and drainage and other incidental work from the Delaware River to the main stem of the existing New Jersey Turnpike in Burlington County, New Jersey, all in connection with the construction of the Pennsylvania Extension of the New Jersey Turnpike.

The principal items of work include:

| | |
|---|---|
| Roadway Excavation, Earth | 1,150,000 cu. yds. |
| Borrow Excavation | 1,100,000 cu. yds. |
| Storm Drains, Reinforced Concrete Pipe | 19,000 lin. ft. |
| Drop Inlets | 190 Each |
| 4-Inch Topsoiling | 348,000 sq. yds. |

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock Eastern Standard Time on the morning of March 3, 1955, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after February 2, 1955, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, New York. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
February 1, 1955

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## OFFICIAL PROPOSALS

Bids: February 10, 1955

### Contract No. G-3

DELAWARE RIVER PORT AUTHORITY
Administration Building
Camden, New Jersey

STRINGER SPANS SUBSTRUCTURE FROM NEWTON CREEK TO NORTH-SOUTH FREEWAY OF THE BRIDGE OVER THE DELAWARE RIVER CONNECTING PACKER AVENUE, PHILADELPHIA, PENNSYLVANIA, AND GLOUCESTER, NEW JERSEY

Sealed bids will be received for Stringer spans substructure from Newton Creek to North-South Freeway of the bridge over the Delaware River connecting Packer Avenue, Philadelphia, Pennsylvania and Gloucester, New Jersey, known as Contract G-3, at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey until 2:30 P. M., (Eastern Standard Time), February 10, 1955, at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon a deposit of $10.00 which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $100,000.00 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania, or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialmen's Bond in the sum of 100 per cent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO
Executive Director

## U. S. Government

Bureau of Reclamation, North Platte River Projects 11855-P5, Casper, Wyoming. UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-361 for furnishing labor and materials and performing all work for STREETS AND WALKS, TRAILER COURT, GARAGES AND UTILITIES, AND FIVE-ROOM DUPLEXES FOR GLENDO GOVERNMENT HOUSING, Oregon Trail Division, Glendo Unit, Wyoming, Missouri River Basin Project, will be mailed to Box 280, Casper, Wyoming or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, February 17, 1955, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming. Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: R. J. Walter, Jr., Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, Projects Manager, Box 280, Casper, Wyoming. No charge for copies of the specifications and drawings furnished for bidding purposes; for all others $2.00 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States. I. J. Matthews.

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DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4342) will be received at Ephrata, Washington, until February 17, 1955, for furnishing labor and materials for earthwork and structures, East Part, Block 14, laterals, sublaterals, and wasteways, Potholes, East Canal laterals, Columbia Basin Project, Washington. Location near Mesa, Washington, in Franklin County. Principal items are: 165,000 cu. yds. excavation; 5,300 lin. ft. of irrigation, culvert, and HC50 pressure pipe; 400 cu. yds. concrete in structures; and other work. Completion time 540 days. For particulars, address Bureau of Reclamation, Ephrata Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

## OFFICIAL PROPOSALS

Bids: February 25, 1955

**New Jersey Turnpike Authority**

### CONTRACT NO. W-3

Proposals are invited for Contract No. W-3 which involves grading, drainage, paving, structures and other incidental work from Interchange No. 6 (Pennsylvania Turnpike Connection) to North of Cranbury-South River Road in Burlington, Mercer and Middlesex Counties, New Jersey, all in connection with the construction of the Widening of the New Jersey Turnpike.

The principal items of work include:

| | |
|---|---|
| Roadway Excavation | 191,200 cu. yds. |
| Borrow Excavation | 767,700 cu. yds. |
| 4" Topsoiling | 952,000 sq. yds. |
| Asphaltic Concrete Pavement | 369,100 sq. yds. |
| Asphaltic Concrete Pavement, Resurfacing | 21,730 Tons |
| Type F Shoulder | 471,400 sq. yds. |
| Curbs | 47,230 lin. ft. |
| Concrete | 9,740 cu. yds. |
| Reinforcement Steel | 1,051,800 Lbs. |
| Transport & Erect Fabricated Structural Steel | 2,080,300 Lbs. |
| Cast-in-place Concrete Piles | 15,950 lin. ft. |
| Underdrains | 111,330 lin. ft. |
| Storm Drains | 52,550 lin. ft. |
| Gutters | 13,270 sq. yds. |
| Guard Rail | 43,350 lin. ft. |
| Demolition of Concrete | 1,350 cu. yds. |

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock, Eastern Standard Time on the morning of February 25, 1955, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their Proposal a Contractor's Financial and Equipment Statement.

Contract Documents may be examined during office hours after February 1, 1955, at the office of the Authority and at the offices of the Consulting Engineers, De Leuw, Cather & Brill, 202 East 44th Street, New York 17, New York and 99 Main Street, Hightstown, New Jersey. Contract Documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract Documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
February 1, 1955

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Bids: February 21, 1955

## Contract HP-120.002

THE PORT OF NEW YORK AUTHORITY
HOBOKEN-PORT AUTHORITY PIERS
HEADHOUSE-AREA 4
ALTERATIONS TO FIRST FLOOR

Sealed proposals for performing alterations to the first floor of the Headhouse (Area 4) at the Hoboken-Port Authority Piers, Hoboken, N. J., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Monday, February 21, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of the documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, February 3, 1955

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## OFFICIAL PROPOSALS

Bids: February 25, 1955

**New Jersey Turnpike Authority**

### CONTRACT NO. W-4

Proposals are invited for Contract No. W-4 which involves grading, drainage, paving, structures and other incidental work from North of Cranbury-South River Road to the Woodbridge Interchange in Middlesex County, New Jersey, all in connection with the construction of the Widening of the New Jersey Turnpike.

The principal items of work include:

| | |
|---|---|
| Roadway Excavation | 340,700 Cu. Yds. |
| Borrow Excavation | 458,300 Cu. Yds. |
| 4" Topsoiling | 808,900 Sq. Yds. |
| Asphaltic Concrete Pavement | 289,500 Sq. Yds. |
| Asphaltic Concrete Pavement, Resurfacing | 5,080 Tons |
| Type F Shoulder | 305,300 Sq. Yds. |
| Curbs | 43,940 Lin. Ft. |
| Concrete | 5,490 Cu Yds. |
| Reinforcement Steel | 714,000 Lbs. |
| Transport & Erect Fabricated Structural Steel | 1,686,000 Lbs. |
| Cast-in-place Concrete Piles | 3,740 Lin. Ft. |
| Underdrains | 64,180 Lin. Ft. |
| Storm Drains | 62,300 Lin. Ft. |
| Gutters | 11,200 Sq. Yds. |
| Guard Rail | 55,100 Lin. Ft. |
| Demolition of Concrete | 934 Cu. Yds. |

Proposals will be received at the New Jersey Turnpike Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock, Eastern Standard Time on the morning of February 25, 1955, at which time and place said proposals will be publicly opened and read.

Bidder must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after February 1, 1955, at the office of the Authority and at the offices of the Consulting Engineers, De Leuw, Cather & Brill, 202 East 44th Street, New York 17, New York, and 99 Main Street, Hightstown, New Jersey. Contract documents will be furnished upon payment of Fifteen Dollars ($15.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
February 1, 1955

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# EMPLOYMENT

*REPLIES (Box No.): Address to office nearest you*
*NEW YORK: 330 W. 42nd St. (36)*
*CHICAGO: 520 N. Michigan Ave. (11)*
*SAN FRANCISCO: 68 Post St. (4)*

## POSITIONS VACANT

*(Additional Positions Vacant Advertising on pages 78 & 79)*

WANTED—CIVIL Engineering graduate for half-time work in prestressed concrete research at university in eastern Pennsylvania. Opportunity for MS or PhD degree. Salary $120, per month with tuition paid. Address reply to P-5021, Engineering News-Record.

BRICKLAYER FOREMAN — Must be capable of laying out work and securing production and accept responsibility. Free to travel. Apply James McHugh Construction Co., 6449 South Park Avenue, Chicago 37, Illinois. Butterfield 8-4100 (Extension 17, for appointment for interview).

SUPERINTENDENT: TOP-flight highway and bridge superintendent wanted by contractor with headquarters in New England. Must be able to produce and have a following of key men. Must be available within 30 days. Liberal compensation for qualified man. P-5085, Engineering News-Record.

WANTED — EXPERIENCED structural steel detailers. Reply with complete resume and salary expected. Berger Steel Company, Inc., State Road 552, Lafayette, Indiana.

DESIGN AND Construction Engineers familiar with highway, sewer, water projects. Location, Illinois, Indiana. Positions with vacations, sick leave, profit sharing. Application should include education, experience, salary required. P-5291, Engineering News-Record.

DRAFTSMEN, STRUCTURAL, Midwestern structural fabricating plant has permanent openings for young draftsmen with at least three years experience in detailing structural and miscellaneous for all types of buildings and highway bridges. All employee benefits, insurance, paid vacations, etc. Reply by letter stating experience and salary requirements to P-5171, Engineering News-Record.

CONSIDERING TOP Administrative and Supervisory personnel in categories of Project manager, job superintendent, general superintendent, coordinator, chief engineer, warehouse superintendent and equipment superintendent preferably with experience on foreign projects in Spanish speaking countries. Send resume to P-5123, Engineering News-Record.

CONSTRUCTION ENGINEER. Growing Alabama contractor wants proven earner to estimate, bid and personally supervise medium size construction. Nominal salary and share in earnings. Only men with highest qualifications considered. Include education, experience, references and earnings expected in first letter. P-5204, Engineering News-Record.

BUILDING CONSTRUCTION Superintendent capable of handling jobs up to 5 or 6 million dollar value. Institutional, industrial and commercial work. Must be able to operate construction and oversee all phases of the work, including functions of the job office. Position is with well established rapidly expanding contractor in Northern Ohio. P-5246, Engineering News-Record.

## POSITIONS VACANT

GENERAL SUPERINTENDENT for large general contractor operating in Ohio, Indiana and Michigan to take charge of bridge department. Must have experience in highway bridges, wet excavation, pile driving, coffer dam work, railroad overpass, underpass and relocation. Excellent future for experienced and capable man. Write fully stating experience, education, salary expected and provide references. All replies confidential. P-5233, Engineering News-Record.

RELIABLE FIELD man: unusual opportunity for good sound construction man as field supervisor and trouble-shooter for prestressed concrete construction. Practical, with some engineering fundamentals and mechanical abilities. Advancement unlimited. Must accept responsibilities willingly. Personal habits beyond reproach. Location Southwest. State experience, salary expected, willingness to travel anywhere, availability, references. P-5236, Engineering News-Record.

ASSISTANT CITY Engineer, Mount Clemens, Michigan (pop. 20,000) engr. grad. Opportunity for early advancement. Salary $6,000. Apply Fred Soule, City Clerk.

MECHANICAL ENGINEER and structural engineer wanted in young, progressive architectural office doing schools, churches, etc. Mechanical engineer with degree and varied experience in heating, air-conditioning and plumbing. Structural engineer with degree and experience in all types of structural design. Applicant submit resume giving experience, salary requirement, earliest availability, age, etc. and a recent photograph. Donald R. Hollis, Architect, Box 71, Overland Park, Kan.

AGGRESSIVE ESTIMATOR—buyer to help organize construction company for building work in Virginia. Prefer man who can invest. State experience, present position, etc. All replies confidential. Reply to P-5368, Engineering News-Record.

WANTED RECENT Civil or mechanical engineering graduates, general field municipal water supply. Annual increase in salary and bonus. Profit sharing plan. Frequent changes in location. Pitometer Associates, Engineers, 50 Church Street, New York City.

BRIDGE DESIGNERS. Experienced and inexperienced men with a civil engineering degree wanted for a period of about 24 months in the office of a well known organization in Central Pennsylvania. State qualifications, age, salary requirements and availability in first letter. P-5355, Engineering News-Record.

STRUCTURAL ENGINEER—graduate, 3 to 6 years experience in bridge and medium building design—for work with eastern Pennsylvania consulting engineering firm. Send record resume and salary requirement to P-5383, Engineering News-Record.

## SELLING OPPORTUNITY OFFERED

CONTRACTORS REPRESENTATIVES for gunite and protective coating. Calling on heavy construction, water works field, etc. Commission. May carry other lines. Mid-Atlantic and New England States only. RW-5365, Engineering News-Record.

(Continued on following page)

# THE STATE HIGHWAY DEPARTMENT of INDIANA

## Has Vacancies

For

**Civil Engineering Graduates, Registered Civil Engineers, Engineer Aides, and Draftsmen in all Phases of Highway Engineering**

With

**GOOD ADVANCEMENT OPPORTUNITIES**

And

**NEW EXCELLENT SALARY SCHEDULE**

Positions Available in

**Road and Bridge Location, Road and Bridge Design, Road and Bridge Construction, Maintenance, Materials and Testing, Traffic, Highway Planning, and Right of Way**

**CAREER SERVICE**

Merit Increases—Annual Vacations and Sick Leave with Pay—Retirement System

***Apply to***

**State Highway Department of Indiana**
**State House Annex**
**102 North Senate Avenue Indianapolis 9, Indiana**

---

# CIVIL ENGINEERS

## Immediate Employment

**South America**

**All applicants must be registered, have a college degree, over 35 years of age with a minimum of 10 years of highway experience, preferably at administrative level.**

## PROJECT ENGINEER

**(Must speak, read and write Spanish)**

- *** Location Engineer**
- *** Bridge Engineer**
- *** Office Engineer**

***Require working knowledge of Spanish**

**Contracts of one to four years duration, with living allowance and family accommodations.**

***Write giving full particulars on education, personal history and work experience.***

**P-5250**, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

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# SALES ENGINEERS

**Middle Atlantic Division of large company has openings for sales engineers in Baltimore, Boston and Harrisburg, Pa. to handle promotion and sale of fabricated metal products to engineering and construction markets. Ages 24 to 30. Engineering degree necessary.**

P-4753, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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# PROJECT MANAGER

**for off-continent air base project. Age 40-50. Graduate engineer, experience as project manager or project engineer supervising construction of multi-million dollar project for architect engineer.**

P-5387, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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# ENGINEERS

## Designers Detailers Draftsmen

**for work on**

**Bridges, Expressways, Turnpikes**

PERMANENT POSITIONS DEPENDING ON EXPERIENCE AND ABILITY
PAID VACATION, SICK LEAVE
HOSPITALIZATION, LIFE INSURANCE
INCLUDE EDUCATON, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

**Howard, Needles, Tammen & Bergendoff**
**1805 GRAND AVE. KANSAS CITY 8, MO.**

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# DESIGN ENGINEERS

**Excellent opportunity for Engineers experienced in design of Filter Plants and Water Works—Bridges and Highways. Recent Graduates also accepted. Good living conditions and Bonus and Pension Plan. Include experience, date available, salary desired in first letter. Gannett Fleming Corddry & Carpenter, Inc., Box 366, Harrisburg, Pa.**

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***Dealer Inquiries Invited* NOW**

**Fast, easy way to**
**CUT WIRE ROPE**
**Low cost, portable, safe**
**For details mail ad to**

**MONTGOMERY MFG. CO.**
**24 M Austin St., Newark 5, N. J.**

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(Continued from preceding page)

## EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

## POSITIONS WANTED

CONSTRUCTION EXECUTIVE, available as project manager, on large operation, chief estimator for large organization or in other executive position where scope warrants employment of top man, thoroughly experienced on all types of construction and in every phase of general contracting. PW-5074, Engineering News-Record.

CONSTRUCTION STIFF, Rigger, who has worked with lubricating oil for years as a hobby, seeks employment in a modest capacity, with a construction company, or other fleet owner using large quantities of oil, where his information and paraphernalia will be investigated, and where he will be encouraged to go ahead with some things he wants to do. Local or foreign. Sidney Stribling, Sta. 8, Asan, Agana, Guam, M. I.

GEN. SUPT. Bridge construction thoroughly familiar, all types bridge construction. Sober, willing to relocate. Presently completing 7-structure job. Available immediately. PW-5075, Engineering News-Record.

CIVIL ENGINEER—Attorney at Law, age 27, 5 years sales experience selling construction industry previous to obtaining law degree. Desire responsible position. PW-5255, Engineering News-Record.

ELECT. ENGINEER, has been acting Elect. Supt. in heavy const. industry. Thoroughly experienced in set-up & maint. Sub St'n's, power plants, elect. shovels, mining equipment, etc. Free to travel, can give ref's. PW-5257, Engineering News-Record.

CONSTRUCTION EXECUTIVE. Graduate engineer desires administrative, executive or sales position in construction field, or where an executive engineer is needed. Have 30 years experience self-employed in building construction, including work of every description such as schools, hospitals, public housing, military work, commercial and private work. Southern United States, Far West or foreign locations. PW-5142, Engineering News-Record.

SENIOR ESTIMATOR. Reg. P.E. 25 years experience, estimating, purchasing, expediting, and supervision. Thoroughly experienced in all types of const. and engineering. PW-5276, Engineering News-Record.

NAVY CIVIL Engineer Corps Officer being released from active duty in April, BSCE, 25, 4 years experience in plant maintenance and new construction, seeks position with construction firm, preferably in Texas. PW-5298, Engineering News-Record.

CIVIL ENGINEERING graduate desires opportunity in sales work. Five years' heavy construction engineering experience. Potential income paramount to starting salary. PW-5371, Engineering News-Record.

B.S.C.E., Reg. P.E., 28, 3 years industrial design steel and concrete; 1 year Wis. St. H'way; desires position in Mid-West or Rocky Mtn area. PW-5370, Engineering News-Record.

CIVIL ENGINEER, 4 years varied consulting experience, field and office. Desires promising future with sub-contractor in concrete or structural steel. New York area. Good education, alert and capable. PW-5356, Engineering News-Record.

REGISTERED ARCHITECT—University degree, married, age 41, widely experienced all phases industrial, commercial, institutional, hydroelectric, public housing work, own business 7 years, 20 years executive and administrative capacity, including job promotion and public relations. Present salary in $18,000.00 per year bracket. Complete resume of experience and qualifications upon request. PW-5362, Engineering News-Record. 520 N. Michigan Avenue, Chicago 11, Illinois.

INDUSTRIAL AND Civil Engineer, 33, single, BS., CE., MSIE, AMASCE, 11 years experience, civil and administrative engineering US and abroad last 4 years with consulting firm, interested in promotion, sales, administration, management, job evaluation. Relocate, overseas preferred. Perfect English, French, German, Italian, some Spanish. PW-5374, Engineering News-Record.

(Continued on opposite page)

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**SALARIED POSITIONS $5,000 — $35,000**

We offer the original personal employment service (established 45 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.

**R. W. BIXBY, Inc.**
**659 Brisbane Bldg. Buffalo 3, N. Y.**

## MECHANICAL ENGINEERS

For company's Equipment Engineering Division located in New York City. Minimum five years' experience designing, selecting and specifying all types of maintenance and shop equipment.

Must know general machine shop practice, garage operations, engine rebuilding, power plant operations, refinery and oil field maintenance equipment sufficiently to be capable of preparing specifications for manufacture, economic and engineering analysis for selection and guidance for tests and inspection of purchased equipment.

Write giving full particulars regarding personal history and work experience. Please include telephone number.

*Recruiting Supervisor, Box 13*

**ARABIAN AMERICAN OIL COMPANY**
505 PARK AVENUE
NEW YORK 22, NEW YORK

## WANTED--SALES ENGINEER

Not over 40. Graduate of technical school and at least five years' business experience. To take charge of Lightsteel Structural Division of an old established, nationally known, successful company. Office location Pittsburgh district. Distribution throughout entire U.S. Good chance for advancement for man with imagination and ability looking for a permanent position with a bright future. State education, employment history and salary. Replies confidential.

P-5308, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

**CONSTRUCTION SUPERINTENDENT**—Expanding company has excellent permanent position open for capable, dependable man experienced in building bridges, pile driving, foundations, earth work, and building construction. Estimating experience required. Illinois—Iowa Operations. Give full details, age, education, experience, references, and salary expected, in first letter.

P-5172, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

## LEARN ESTIMATING

Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:

**TAMBLYN SYSTEM**
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STRUCTURAL ENGINEERING
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OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-third year

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## Engineers—Foremen—Office Men

Learn latest methods to organize and run work. Prepare for the top jobs.

*Send post card for details.*

**GEO. E. DEATHERAGE & SON**
**CONSTRUCTION CONSULTANTS**
411 So. 5th Ave. Lake Worth, Florida

## ENGINEERING SERVICE

Highly qualified group of licensed engineers and draftsmen will do on schedule long span bridges, thruway type bridges, etc. for engineering firms, state or local highway departments. Experience includes Pennsylvania and New Jersey Turnpikes, New York Thruway, Garden State Parkway, etc.

SS-5379, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

## *POSITIONS WANTED*

(Continued from opposite page)

REG. PROF. Engr. age 39 available 30 days notice for top management position with manufacturer or distributor of heavy construction equipment. Experienced in promotion, public relations, sales and use of earthmoving equipment. PW-5240, Engineering News-Record.

CONSTRUCTION EXECUTIVE—Project Manager. Top construction management. Background; chemical, industrial, multiple housing, heavy const., public works. Excellent customer-labor relations. Following of producing personnel. PW-5345, Engineering News-Record.

SUPERVISING ENGR. available architects or owners representative. 19 yrs. subcontract supervision, inspection commercial, industrial, public contractors, engineers, architects, owners. Permanent connection preferred or single project with future. Licensed civil grad. PW-5346, Engineering News-Record.

CONST. ENGR. desires permanent supervisory connection with general contractor. Long experience public, commercial, industrial construction methods, materials, labor. Reg. Civil. PW-5347, Engineering News-Record.

CIVIL ENGINEER. B.S.C.E. '54. Desires position as structural designer. Hard worker and conscientious. Married. Desires to relocate. East or west coast. PW-5342, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT or Project Manager 35 years in heavy construction, most recent on oil refinery and chemical plants. Also on major steel mill expansion in Chicago area. Past experience includes several major office buildings in Chicago as well as two oil refinery units in Europe. Can supply highest references from former employers. Available after Feb. 1st, 1955 am willing to go anywhere, but would prefer the far west or deep south. Reply to PW-5327, Engineering News-Record.

SALE SMANAGER or Sales Engineer 10 years experience in selling and directing selling of construction machinery. 6 years experience in manufacture of heavy machinery. BSME—licensed P.E. Seeks manufacturer or distributor who needs a hard working, successful closer. PW-5326, Engineering News-Record.

CONSTRUCTION MANAGER — R.P.E. with long experience on buildings & heavy construction as project engineer, sup't. & chief estimator. Qualified to negotiate contracts. PW-5321, Engineering News-Record.

CONSTRUCTION SUP'T—22 years experience. Highway bridges, office buildings, schools, factories and sewerage treatment plants. Good organizer, co-ordinate subs. Will travel but prefer mid west. PW-5329, Engineering News-Record.

CONSTRUCTION ENGINEER—C. E. Grad. Reg. Prof. Engineer 21 years experience 11 of which as Supt. of Const. Know job pushing, equipment, cost control, estimating. Experience about ⅓ building ⅔ heavy—on jobs $10,000,000 to $50,000. Age 41. PW-5304, Engineering News-Record.

COST ENGINEER, 41, seven years central power station construction costs and C.P.R. inventory. Available 60 days. PW-5382, Engineering News-Record.

ENGINEERING GEOLOGIST, age 39, 16 years experience in geology, geophysics, and engineering, desires position with design or construction firm. Degrees—Geological engineer and MSc in geology. Registered in Colorado. PW-5381, Engineering News-Record.

GEN'L. CONSTR. Supt.—Project Manager: Desires employment with firm handling multimillion dollar works listed herein: background includes all types of large industrial plants, public works & utilities, heavy construction, land & marine work operations; over 25 yrs. in planning, organization, executive & management know-how for governmental & private competitive contracts. Cost-minded judgment. References: Report short notice: PW-5380, Engineering News-Record.

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# EDITORIALS

## Bold Highway Planning

THE PROPOSAL of the Port of New York Authority and the Triborough Bridge and Tunnel Authority to spend nearly $600 million within the next five years for over-water crossings and approach highways in the New York metropolitan area is bold planning on a grand scale. It is the kind of planning that every major city in the country must embrace if it is to cope with the growth in vehicle movements. In New York's case 76,300,000 vehicles crossed the Hudson River last year on the George Washington Bridge and through the Holland and Lincoln Tunnels, almost twice the prewar level. An additional 4,000,000 crossed on ferries. By 1960 the total is estimated at 105,000,000. And percentagewise many other cities can match these increases.

The two authorities at New York propose to raise $379 million of the total—chiefly for bridges and approaches. The remaining $198 million for expressways must come from state, city and federal-aid highway funds, the authorities state, because the expressways will not be self-liquidating. The only exception to this appears to be the Bergen County Expressway in New Jersey, a proposed new main route from Paterson to the west approach to the George Washington Bridge. The Port Authority has agreed to provide the state's share of the cost of this highway, estimated at $60 million.

One unanswered question, and one for which the two authorities presumably will seek an answer as soon as Congress acts on the President's highway program is what part of the cost of the proposed new facilities might logically be paid for by the federal government as part of the interstate highway system—if Congress accepts the Clay Committee recommendation on federal financing of that system.

Maps of the proposed interstate system are indefinite as to location of the proposed connections between New England highways and New Jersey main routes, but certainly some one of the highway routes through New York City that the Port Authority now proposes to improve should be assigned to the interstate net. Logic would appear to dictate that at least two widely separated ones should be selected. Thus one might cross the Hudson over the George Washington Bridge and the other might reach Brooklyn by way of the proposed Narrows Bridge.

Under the Clay Committee proposal, assignment of some parts of the proposed work to the interstate system would make a material reduction in the amount the states or the city would have to provide for expressways needed to complete a highway system adequate for the metropolitan region. Also, if credit is to be given for some part of money spent in the past in building sections of the interstate system to adequate standards, as is proposed by the Clay Committee, then still more money should be available to further reduce the amount to be raised by the states or cities through which the routes pass.

Regardless of details or changes that may be made as the New York plan is developed, such grand scale planning as it represents is needed at the present time. And other cities should follow New York's lead.

## Tough Tunnel Conquered

NOT SINCE the classic construction battle on the San Jacinto Tunnel of the Colorado River Aqueduct back in the 30's has a tunnel job required such heroic measures as those which were crowned with success two weeks ago on the Tecolote Tunnel, also in southern California. In both cases inflowing water was the enemy, and in both cases large and special pumping installations eventually defeated it.

But while the water pumping job at San Jacinto was much more remarkable—with as much as 28,500 gpm having to be removed against an 800-ft head—Tecolote had also to contend with heat. Its inflow of hot water (up to 9100 gpm and 116 deg F), with resulting 100 percent humidity, made working conditions nearly unbearable. And here also it was pumps—and their novel compressed air motor drive—that turned the tide.

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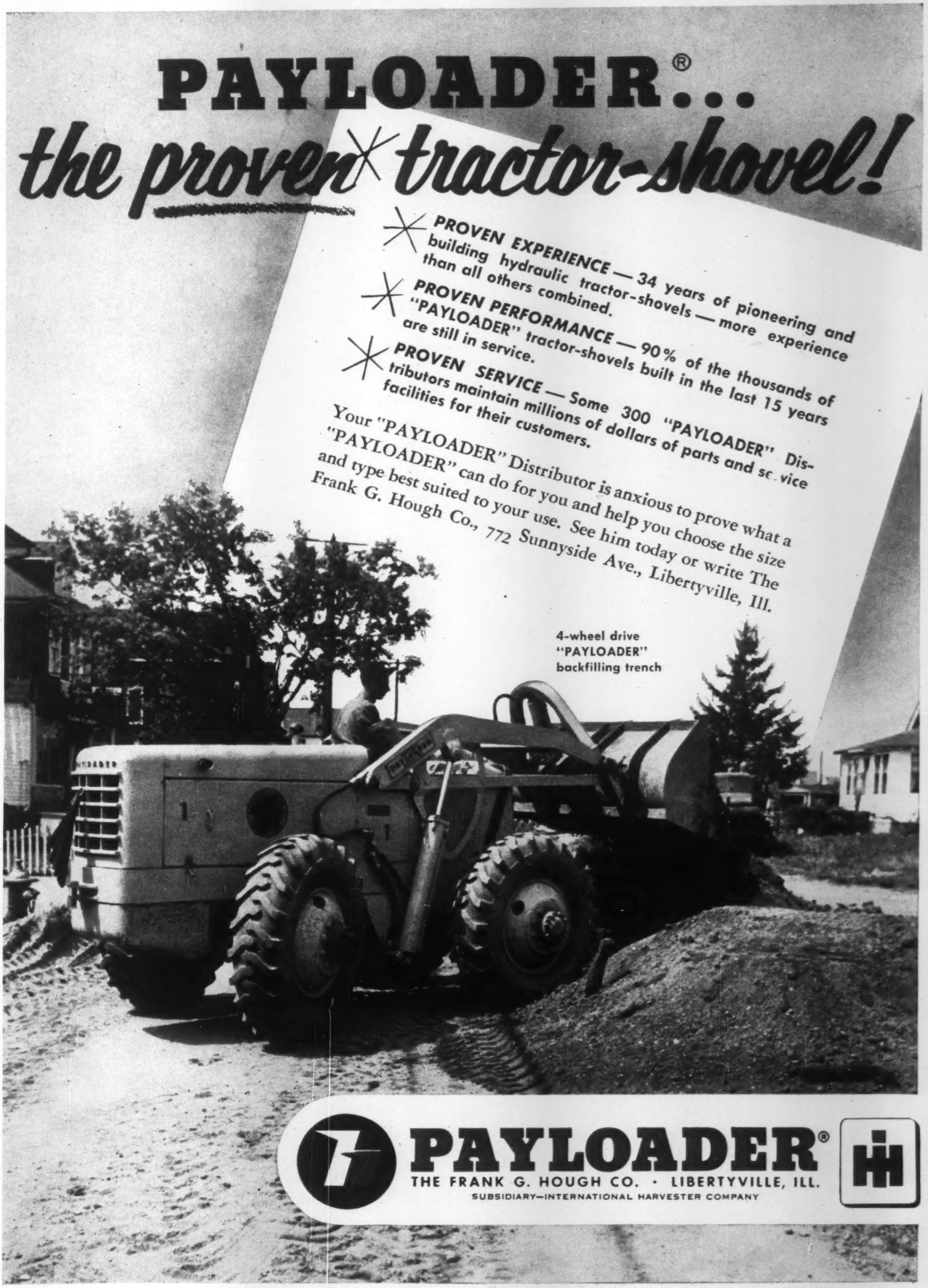
Tunnel jobs, of course, have a tendency to run into unexpected conditions, but only rarely of such a type as to call for bold new methods and large increases in cost. When one does, it becomes worthy of special note to emphasize the ever-present possibility of unexpected conditions, the necessity to be prepared to pay extra to overcome them—and, of course, to emphasize new construction techniques.

All these considerations apply to Tecolote. Its added cost could hardly have been avoided short of not having undertaken it in the first place. The new methods it introduced are available for the next tough tunnel job. And its contractors and engineers have added significantly to construction knowledge. Tecolote is worth remembering.



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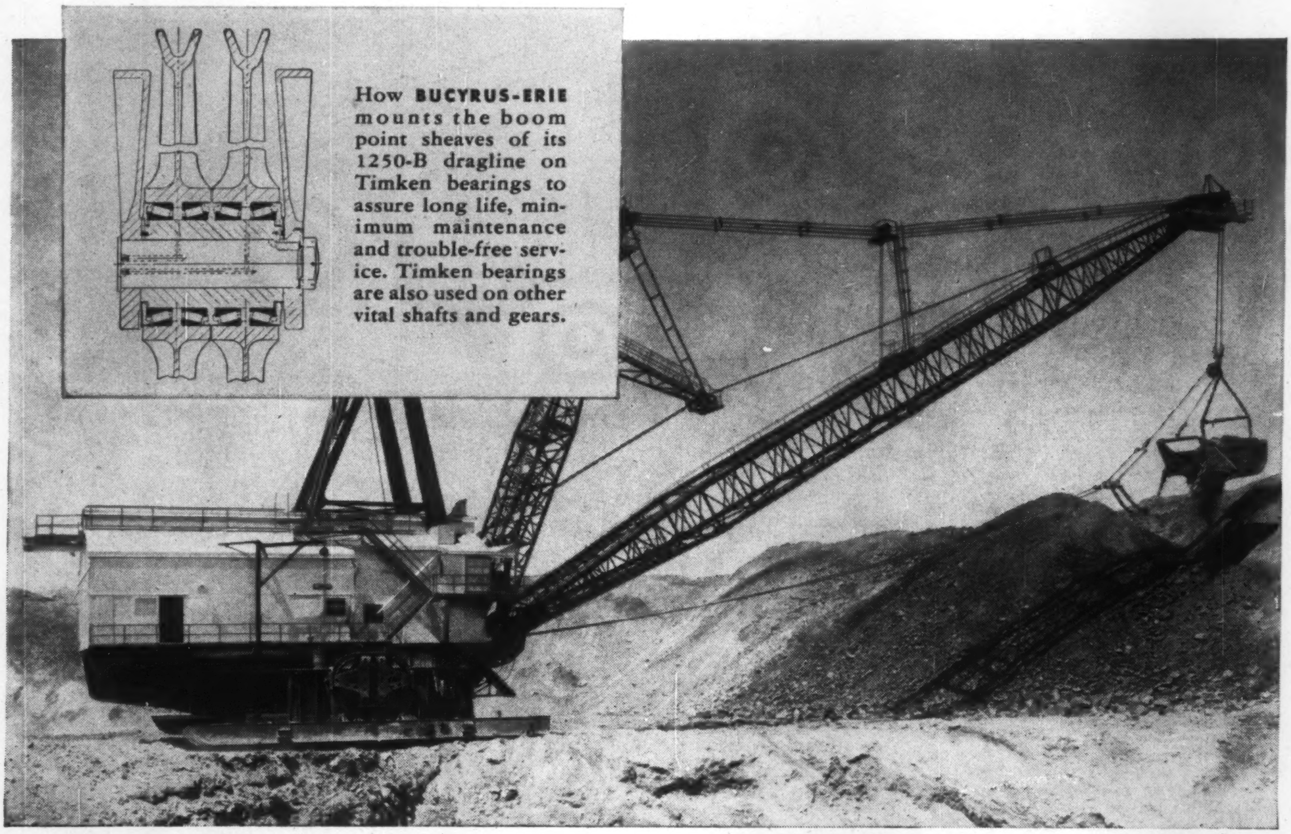
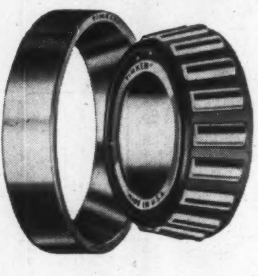


How **BUCYRUS-ERIE** mounts the boom point sheaves of its 1250-B dragline on Timken bearings to assure long life, minimum maintenance and trouble-free service. Timken bearings are also used on other vital shafts and gears.



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